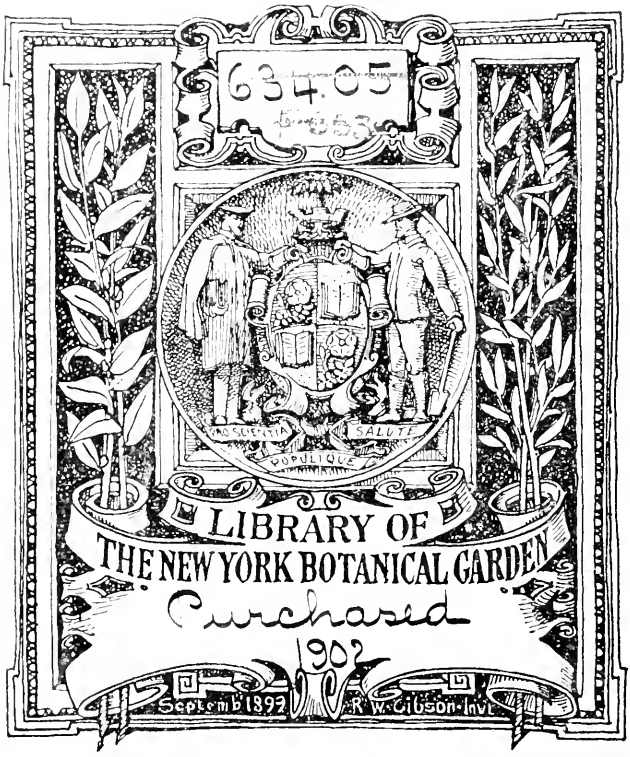
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THE

Florist and Pomologist:

A PICTORIAL MONTHLY MAGAZINE

OF

FLOWERS, FRUITS, AND GENERAL HORTICULTURE.

CONDUCTED BY

THOMAS MOORE, F.L.S., AND WILLIAM PAUL, F.R.H.S.

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LIST OF PLATES.

LIST OF WOODCUTS.

Early Ascot Peach

THE

FLORIST AND POMOLOGIST.

THE EARLY ASCOT PEACH.

WITH AN ILLUSTRATION.

FROM excellent samples communicated by the Rev. W. F. Radclyffe, the accompanying illustration of this choice second-early Peach has been prepared. It was raised a few years since by Mr. Standish, of the Royal Ascot Nursery, and proves to be a variety worth introducing to general cultivation. Our note of Mr. Radclyffe's fruit runs thus:—*Fruit* middle-size, roundish, somewhat depressed, with a shallow suture. *Skin* flushed with bright red on nearly all parts, suffused on the shady side with crimson, and on the exposed side with a deeper blood-red, almost black. *Flesh* slightly tinted with red at the stone, from which it parts freely, pale greenish straw-colour, with abundant juice, and an excellent flavour. Mr. Radclyffe reports that the tree is hardy, and a good setter, and moreover suggests that its name ought to have been called Royal Ascot.

This variety belongs to the section which bears small flowers, and has small roundish reniform glands on its petioles. We learn from Mr. Standish that it was raised from the Elruge Nectarine, fertilised either by the Noblesse or Barrington Peach, no exact record of the cross having been kept. It may fairly be given a place amongst meritorious novelties.—T. Moore.

NEW CARNATIONS.

IT is very rarely, indeed, at the present day that one is able to introduce a list of new varieties of Carnations. So precarious are the seasons in regard to saving seed, and so small is the number of those who take an interest in raising seedlings, that the appearance of choice new varieties has become a rare occurrence. Since, however, many of the fine old varieties have become scarce, we may hope that some spirited growers of the Carnation may be induced to try their hand at raising new meritorious varieties, so that this popular flower may keep the high position in which it has always hitherto stood. The raising of any new flowers, from seed, is a most interesting amusement. For a beginner to be successful in his enterprise, it is very essential to have a few good, healthy, strong-growing selected varieties of the very best kinds, choosing those that produce but moderately full, or rather thin flowers, as these generally produce most seed, and the newer the varieties selected the better, as recent seedlings of all florists' flowers generally produce seed in greater abundance than the

older varieties. The plants may be either grown in pots or in the open ground, but pot-culture is preferable. As soon as the flowers begin to expand they should be protected from the rain, either by putting them into a greenhouse or by placing glasses over them, but give them plenty of air and allow them to have the sun, as plants bloomed under a covering in the shade produce little or no seed, neither do those that are entirely exposed to the weather, because the occasional showers of rain, and the night dews, keep the base of the petals continually moist, which, as a consequence, leads to mouldiness and decay. It is a good plan, when the bloom is over, to extract the decayed petals, taking particular care in doing so not to injure the two stigmas or arms of the style, which appear like horns projected from the seed-vessel. The plants should not be layered until the seed becomes ripened, because this operation will most certainly reduce, if not quite destroy the seed crop.

The seed generally becomes ripe about the end of August. Care should be taken not to gather it until it is quite ripe, and it should be kept in the seed-vessel or pericarp until the time to sow it, which is about the first week in May. The following varieties are all quite new and have bloomed very finely during the last season, some of them having been honoured with certificates :—

MRS. FREDERIC BURNABY* (*Turner*).—Rose flake; a fine large full flower, with large, smooth, finely-shaped petals; the colour a beautiful soft rose; remarkably distinct, and a great favourite; extra fine.

CAMPANINI* (*Turner*).—Scarlet bizarre; a good large flower, with large smooth petals, and very bright colours; extra fine.

SYBIL (*Holmes*).—Rose flake, a very large flower, with fine broad smooth petals, well marked with bright rose; extra fine.

ISAAC WILKINSON* (*Turner*).—Crimson bizarre; a fine large full flower, very smooth and well marked, with fine bright colours; extra fine.

SATURN (*Hextall*).—Scarlet bizarre; a fine large smooth flower, very bright and pure in colour; a grand novelty; received a certificate of merit at Leicester.

MR. HEXTALL (*Turner*).—Rose flake; a good large beautifully marked flower, with fine smooth petals and very bright colour; extra fine.

GUARDSMAN (*Turner*).—Scarlet bizarre; a large full flower, very bold and attractive, and quite distinct; fine.

AJAX* (*Hextall*).—Purple flake; a fine large bold flower, well marked with very bright purple; quite distinct; extra fine.

SUPERB* (*Ingram*).—Scarlet flake; a fine flower, with good smooth petals, and very nicely marked; extra fine.

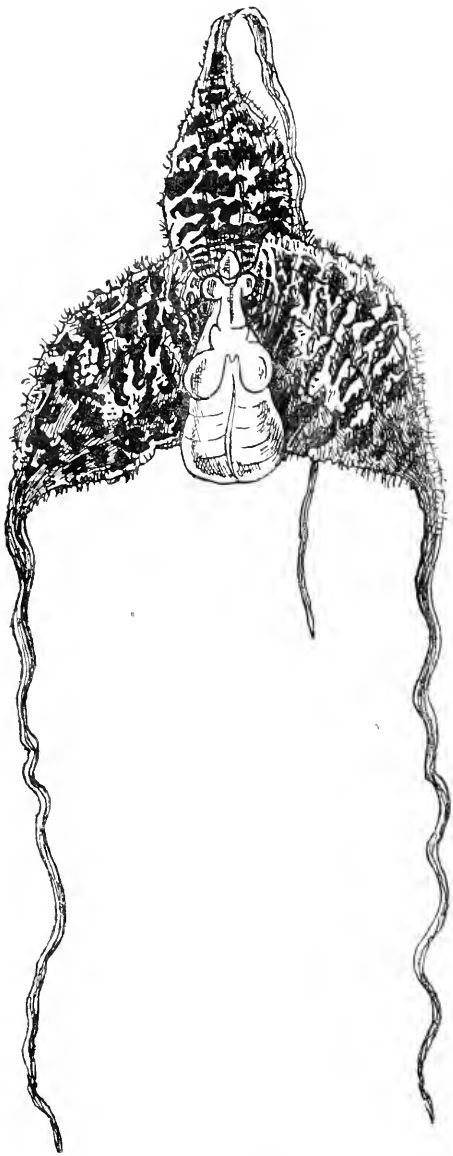
MARS (*Hextall*).—Scarlet bizarre; a good bright well-marked flower, much in the style of Admiral Curzon, but a stronger grower; extra fine.

Those marked * have been awarded first-class certificates during the past blooming season.—JOHN BALL, *Slough*.

MASDEVALLIA CHIMÆRA.

WE have here a novelty indeed, another of the Lindenian introductions from western South America. It has been already described by Professor Reichenbach in the *Gardeners' Chronicle* (1872, 463) in these words :—"I cannot remember to have ever been more astonished than when I obtained this remarkable flower; it was botanically so unexpected. Such

a Masdevallia, not to be satisfied with its hairy ornaments, but to deprive *Cypripedia* and *Cataseta* of their prestige,—that of having a slipper in lieu of a tongue!



MASDEVALLIA CHIMÆRA.

I have a sketch prepared by the lucky discoverer. It shows the leaf cuneate-oblong, acute, a foot long. The flower-stalks are represented with five flowers; the flowers are described as yellow, with black hairs; the lip golden-yellow. It has a widely opened flower, with long tails, the fimbriate-oblong sepals covered internally with stiff hairs. The petals are slit at their apex into four wings, containing in their centre a great warty body."

A few more facts concerning so remarkable a plant may not be uninteresting to our daily increasing orchid-lovers and amateurs. The annexed figure shows the general contour of the flower. The sepals are of a pale yellow colour, barred and blotched with carmine, and exceedingly hairy on their interior surface, especially towards the margins. The lip is pure white according to one account, received from a source where the plant is well known; yellow according to another, equally reliable. The plant itself will shortly tell which of these statements is true.

This is not the only novelty that exists in the Lindenian collection of new orchids. There is yet another, *M. Colibri*, the flowers of which are of a lovely blue, similar to the tints of the pretty Colibras, after which it is named. We have blue Disas, and now, not satisfied with scarlets, yellows, reds, greens, purples, lilacs, and crimsons, Masdevallias rush off into the celestial tint, cœrulean blue. What next? Time alone can answer the enquiry.

The most peculiar point about *M. Chimæra* is its saccate lip, exactly like that of a *Cypripedium*. Believers in the Darwinian theory have here something highly interesting, while amateur orchid-growers have another curious and beautiful plant added to their pet collections.—F. W. BURBIDGE.

THE TREE PÆONY AS A DECORATIVE PLANT.

FEW persons are aware what striking and excellent plants the Tree Pæonies are for forcing and decorative purposes. Amongst them there is no end of varieties of bold characteristic beauty. I think quite a feature might be made at one of the Spring meetings at South Kensington, by offering a prize for a collection of these gorgeous plants. I fancy the thing would create quite a *furore*, and astonish the visitors to our London shows. I much question if the majority of people when viewing a forced collection of Pæonies at a distance, would really know what they were looking at. No flower that I am acquainted with is more conspicuous at a long distance, its glowing shades of colour shining forth with brilliant effect. Indeed the distinct and striking characters of the whole plant, are points of excellence rarely seen combined in one species. So convinced was I of their value as decorative plants in Spring, that when at Enville I had ordered a large collection for forcing, to light up with their glowing colours the large conservatory. Little trouble or care is required to have them in perfection in February and March. Plenty of light is the most essential thing in their culture at that period; they should be placed as near the glass as possible, plunged in a mild bottom-heat, and occasionally syringed. The temperature of the house need not exceed 50° or 55°.—EDWARD BENNETT, *Gardener to the Marquis of Salisbury, Hatfield, Herts.*

BOUVARDIAS AS WINTER DECORATIVE PLANTS.

AM glad to see that these very useful winter-blooming plants are beginning to obtain some attention among English growers, for since I have been in this country, I have often felt surprised that none of us found out their merits before. It is certain that until recently, there were but few varieties known, and several of the best have originated in this country. If I had again to find a private establishment in England in cut flowers during the winter, I should certainly grow some hundreds of these for that purpose; besides which well-grown plants in pots are very useful for furnishing. A few plants of *B. Vreelandii* would scent a large conservatory at night with the most delicate and pleasant of perfumes. I do not consider your plate did this fine variety justice, although the rosy tint on one spray, is like we have it out of doors in summer.

We have another sport from *B. Hogarth* called *The Bride*, which, as regards size, shape of flower, and habit of growth, is the same as *Vreelandii*, but the colour is a beautiful satin rose. I can only compare it to the colour in Tea Rose La France. This variety, I have no doubt, will be very popular when known in England, but, of course, would not cause the sensation which *Vreelandii* did here.

since *Vreelandii* came first, and the white was considered indispensable: moreover, this latter variety stands well when cut, and will travel a long distance without drooping, a fault which places *B. jasminoides* in the background.

It would be well to try in England, the plan of planting them out in a warm pit or frame for cutting all the summer, and then clearing them away, to receive another batch in the autumn. In this country, young plants grow so fast and flower so well in the open ground that it is not necessary to do so: but a few plants of *B. jasminoides*, treated as shrubs planted in a greenhouse, give abundance of flowers at all times.—JAMES TAPLIN, *South Amboy, New Jersey, U.S.A.*

THE FAILURE OF OUT-DOOR FRUIT CROPS IN 1872.

NEVER, within my recollection, has such a general failure of Hardy Fruits occurred as in the year of grace 1872. In some sheltered localities both orchards and gardens may have produced good crops on particular varieties of Apples, Pears, and Plums, but these instances were few and far between. In the kitchen garden and orchard here, the fruit trees are mostly young, with a great want of shelter from trees or belts of trees in the vicinity. The only varieties of Apples which bore anything of a crop were:—*Lord Suffield*, the *Oldendburg*, a Russian variety, the *Alfriston*, the *Cockle Pippin*, and the *Margil*. The *Keswick Codlin*, which is generally such a great bearer, was this year quite devoid of any fruit, either on old or young trees. A quantity of single and double cordon trees on the French stock ripened good crops, the varieties being, *Calville blanc*, *Calville St. Sauveur*, *Belle Dubois*, *Reinette grise*, and *Reinette du Canada*. All the varieties were grown on the bottom of south and south-west walls, and the foliage of the trees above them protected the blossoms from the frosts in April and May. The Pear crop on standards was likewise nearly a total failure; the only varieties showing fair crops were *Louise Bonne*, *Broom Park*, *Beurré de Capiaumont*, and the *Easter Beurré*, with the stewing pears *Catillac*, *Leon le Clerc de Laval*, and *Vicar of Winkfield*. Pears on the walls, from their setting earlier than on standards, escaped, and showed good crops; particularly, *Beurré d'Amanlis Panachée*, *Marie Louise*, *Doyenné du Comice*, *Winter Nelis*, and *Joséphine de Malines*. Apricots here, although covered with glass lights, were a greater failure than in any year since 1860, and the same may be said of Peaches and Nectarines, on the open walls. On a long glass-covered wall here, where a little artificial heat can be given, Peaches, Nectarines, Plums, and Cherries, however, were a great crop, and made up for all the losses on the open walls. The hardy bush-fruit, such as Currants and Gooseberries, were much injured by the frosts on the tops of the bushes, and produced only half a crop; but owing to the wet summer, Raspberries bore excellent crops, and the same may be said of Strawberries, though the rain rotted them on the ground in July.

Owing to the rainy and rather warm summer, vegetables of all kinds produced excellent crops, the greatest failure being in that noble tuber, the Potato. It may be interesting to some readers of the FLORIST AND POMOLOGIST

to know the quantity of rain which has fallen here in each year, from 1837 to the end of November, 1872, a period of 36 years :—

RAINFALL AT WELBECK ABBEY FOR THE LAST 36 YEARS.

	in. pts.		in. pts.		in. pts.
1837	26·74	1849	24·42	1861	26·19
1838	23·29	1850	19·05	1862	22·97
1839	35·10	1851	19·41	1863	18·92
1840	24·13	1852	28·42	1864	22·65
1841	29·80	1853	23·67	1865	24·41
1842	23·67	1854	17·52	1866	26·68
1843	26·52	1855	21·81	1867	26·13
1844	18·32	1856	29·08	1868	22·26
1845	28·31	1857	26·39	1869	26·50
1846	25·90	1858	21·83	1870	21·58
1847	20·29	1859	25·65	1871	25·48
1848	34·83	1860	30·54	1872*	34·68

* Up to the end of November.

It will be seen from the annexed register, that the rain-fall up to the end of November in 1872 has been unprecedentedly large, being only for eleven months. The rainfalls in 1839, 1841, 1845 (the year in which the potato disease first appeared), 1848, 1852, 1856, and 1860 were the largest, and it will be seen they come nearly at regular intervals. Since 1860 we have had no very wet years, which may account for the great rainfall this year.—WILLIAM TILLERY, *Welbeck*.

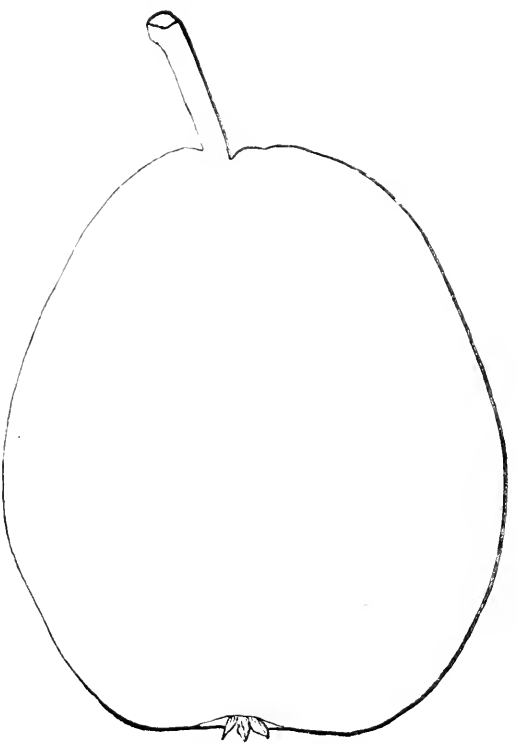
ZONAL AND NOSEGAY PELARGONIUMS IN POTS.

A GOOD selection of the different colours and shades of these plants, when well grown and well staged, is very effective. I have grown a good many of the newer sorts this year, and I find that they are very fine. *Sir Charles Napier*, a bright scarlet, with fine truss, is a grand pot-plant. *Wellington*, dark crimson, produces immense trusses. *Ianthe*, a bluish crimson, soft and pleasing in colour, looks as if it would be a good bedder. *Madame Hoste* is white, shaded with rosy blue. *Madame Duthoo Bertrand*, a carmine-mauve, is a beautiful thing, fine for cutting purposes. *Avocat Gambetta* is a fine bright scarlet, with large truss. *Dr. Muret* is a cerise-scarlet, producing fine large trusses. *Lucius*, a bright rose, bears very large trusses, and is most effective. *Mons. Eugène Buenzod* is rosy pink, with light centre, and very free. *Maid of Kent*, pink, is with us better than Christine as a bedder. *Mrs. Upton*, a dwarf only, with pink flowers, beds well. *Lady Louisa Egerton*, pink, has fine large flower-trusses. *Florence Durand*, *Rose Bradwardine*, and *Amaranth* are rosy pinks, the last named having a fine purplish shade, and promising to be a good bedder. *Chunder Sen*, *Mrs. Hetley*, *Rev. C. P. Peach*, and *Corsair*, are all scarlets, and, especially the last two, are grand in pots, with large noble trusses. *Bayard*, *Mayflower*, *Mrs. Mellows*, *Douglas Pearson*, *William Thomson*, are fine crimsons ; the last two are equally good for bedding. Having thoroughly tried both this year for bedding purposes, I consider *William Thomson* the best of its colour Mr. Pearson has yet sent out. I hear he has something extra good in store for next season. *Colonel Holden* and *F. Bradley*, rosy crimson, bear large

trusses, and are fine. *Mrs. Hole*, a magenta, will from all appearance, when known, become a general favourite for bedding, since it resembles in habit the Violet Hall Nosegay, though dwarfer than that variety.—A. HENDERSON, *Thoresby*.

PEAR PRINCE IMPERIAL.

IT is pleasant in this year of scarcity to speak of a good fruit. Fruits have not only been scarce, but also inferior in quality, as compared with what they generally are. The variety I am now about to describe has been proved for several seasons to be of very superior quality; this season it has been especially so. Having its character thus far fixed, I venture—although



Pears of its season are almost a glut—to recommend its cultivation. There are two Prince Imperials. The one now under notice is a seedling raised by M. Grégoire, to whom we are indebted for many fine Pears.

The fruit is of about medium size, oval or slightly pyriform in shape, very even and regular in outline. The skin is smooth, of a pale lemon colour, splashed and spotted with light cinnamon-russet. The eye is small, open, having the segments of the calyx erect and short, set almost level with the surface of the fruit. The stalk is slender, about half-an-inch in length, inserted a little on one side without any depression. The flesh is buttery, very melting and juicy, with an exceed-

ingly small core, having a reddish tinge, of rich and excellent flavour, with a high aroma. A very handsome-looking, richly-flavoured, and truly excellent Pear. Tree a profuse bearer, of moderate growth, forming a fine pyramid. It succeeds well on the Quince. The season is at the end of October, extending into November.—A. F. Barron, *Chiswick*.

THE APPLE: ITS CULTURE AND VARIETIES.—Chap. I.

It is purposed in the present and following papers to enter somewhat at length into the culture of this most useful and important fruit, principally with regard to the very great facility with which, by particular modes of treatment, it may be so restricted in its growth, whilst at the same time rendered more fruitful, as to meet the wants of many amateurs who cannot command a large space for its culture, yet to whom a good supply of Apples is indispensable as an article of family consumption. Further on I may glance at its culture on a larger scale as a source of profit for sale; and, either in passing, or finally, offer a few remarks on some of the most eligible varieties.

Presuming, then, that the primary object of the cultivator is to obtain from a comparatively small space the greatest amount of fruit which it is capable of producing, it is imperative that the tree should be taken in hand from the very first, and placed under complete control as regards the development of its growth. Pruning and careful treatment may have a very beneficial effect on older trees, but no amount of pruning or treatment will ever bring them into the condition required, unless they were first propagated with that end in view. To understand this more clearly, it is necessary to begin at the beginning, and learn something of the nature of the stocks on which the varieties are grafted or worked.

There are three kinds of stocks in general use, which are eligible for the purpose of working the choice sorts of Apples upon, and from which the selection should be made in accordance with the object in view. One is called the Free Stock; it is generally raised from the pips or seeds of the cultivated Apple, and is principally used where a strong and luxuriant growth is desired for orchard trees, with ample space at command; this sort must be especially avoided where a dwarf fruitful habit is required. The next is the Crab Stock, which is the produce of the pips of the Wild Crab, or Crab Apple of the woods, and being indigenous to the soil, it is generally more durable than the free stock when introduced into cultivation. There are said to be three varieties of the Crab indigenous to this country; these, however, cannot be fixed, as they may be altered by cultivation, or even removal from one kind of soil to another, but notwithstanding this fact, the seed should not be chosen indiscriminately; the Crabs from any trees of a stunted growth, or with cankered wood, should invariably be rejected, and those only should be selected which are the produce of trees of a vigorous and clean habit of growth, and which produce good-sized fruit. Generally speaking, the variety with the largest fruit has a white skin and no colour, with the fruit broader than deep; the next, also of good size and habit of growth, has the fruit deeper than

broad, and coloured on one side; both, when in good condition, are excellent parents of stocks, and the trees worked upon them are generally durable.

I hope to be able, further on, to note some of the effects of the above stocks; but for the present, in returning to the subject more immediately before us, it may be stated that neither of these is adapted for the purposes of the amateur with a limited space, so that we must fall back on the third sort, the Paradise Stock, about which there appears to be some degree of uncertainty, which I have never seen rightly cleared up. Whether they are solely the produce of seed of the White Paradise Apple, or whether grown indiscriminately from Codlin pips, as described by an old author, is not quite clear to me, and is probably immaterial to our purpose, as it is sufficient for the amateur to know that there are three kinds of Paradise stock in use, namely, the English Paradise, the Dutch Paradise, and the French Paradise or Doucin, all of which have their advocates, and are, no doubt, excellent in their way, and all of which possess the property, which is all-important to the amateur, of restricting a luxuriant growth, and inducing a fruitful habit—in other words, having the effect of dwarfing the tree, so that it carries on all its functions in a small compass. It is, however, curious to observe that although the use of these stocks stunts the growth of the tree, the size of the fruit is in no way deteriorated, but, on the contrary, it is often larger than that produced on more free-growing stocks. In purchasing, therefore, care must be taken to secure trees on the Paradise Stock.

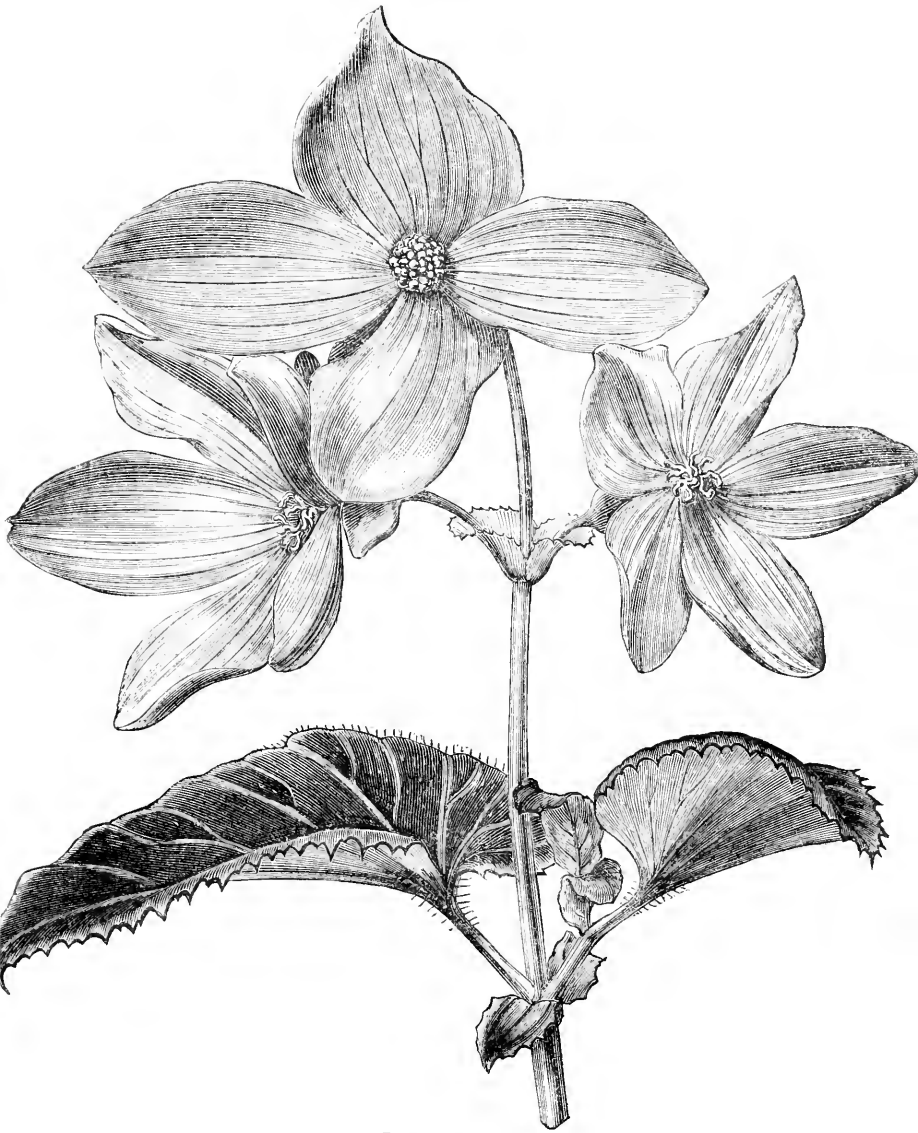
The next thing to be taken into consideration is the situation in which it is intended to plant the trees, regarding which it is immaterial whether they are to be placed in a quarter by themselves or near the edges of the walks round the garden. The latter is, however, preferable, as the trees are then more easily manipulated, and they are also in such situations more ornamental, and a source of greater pleasure to the owner, who can at any time stroll round his walks, watch the various stages of development, and apply the necessary pruning and pinching-back without much treading on the soil. In either case, whether in one large quarter or in a marginal border, there will be the same need of a careful preparation of the soil. If it be a friable loam of good quality, deep, and with a naturally well-drained subsoil, the only preparation needed will be a thorough trenching up to a depth of two feet, this manipulation not being confined to the holes in which the trees are to be planted, but extended to the whole of the quarter in which the trees are to be planted. If they are to be placed as marginal trees near the walks, a width of six feet at least from the edge of the walk, should be thus trenched up. But if the soil is shallow and the subsoil either stiff clay and very wet, or hard rock, or poor sand, the surface-soil should be thrown on one side, and the subsoil removed to the entire depth of two feet. If clayey and wet, an additional trench down the centre, a good foot in depth, and one foot wide, should be taken out and filled with broken bricks or clean stones, and this drain should be continued to some convenient outlet. It may be asked, why not use drain pipes? Simply because in a very

few years pipes become choked with roots, and cease to act, whilst well-made rubble drains will carry the surplus water away for generations. After removing the subsoil to the required depth, fill all up with good turfy loam, but do not on any account mix manure from the dung-heap with it; it is a mistaken notion on the part of persons inexperienced in the requirements of hard-wooded trees, to mix rank manure in the soil. Such manure is only serviceable on occasions which will be pointed out, and should be applied on the surface as a mulching; but if broken bones are to be had, they may be mixed with the soil, because they are slow in action, and supply a gentle stimulus for years. And now again, it may be asked, why insist on so much depth of good soil? I answer because I find from experience that the roots of the Paradise Stock revel in a well-prepared soil, and that it imparts to a naturally slow-growing stock a vigour which, in its reaction on the growth of the scion, gives room for a free manipulation on the part of the operator, so that growth follows on restrictive treatment. We must always remember that in checking growth we interfere with root-action, and that to maintain the balance, the roots should have the most favourable medium we can give them in which to develope themselves freely. Some may think that because a limited growth is required, a limited amount of soil is sufficient: but it is not so, for trees under such treatment soon degenerate into debility, and ultimately waste away.—JOHN COX, *Redleaf.*

BEGONIA INTERMEDIA.

BEGONIAS seem to be specially amenable to horticultural influences, for though a large proportion of the numerous species are beautiful in themselves, they have yielded to the hybridizer many still choicer floral gems. A recent example may be cited in the case of *Begonia weltoniensis*, which is one of the best decorative plants that was ever raised. Latterly a batch of high-coloured hybrids have resulted from the crossing of the charming *B. Veitchii*, and some allied kinds, with *B. boliviensis*, and these promise to eclipse all that have preceded them in utility and in beauty. As examples of this set, *B. Sedeni*, *B. Chelsoni*, and *B. rubra superba*, may be named as prominent examples, all free-blooming branching plants, with large and highly coloured flowers.

Another of the same series is the *B. intermedia*, raised by the Messrs. Veitch and Sons, of Chelsea, and of which we now introduce a figure. It is a hybrid, the result of a cross between *B. Veitchii* and *B. boliviensis*, partaking of the habit of the latter, the plant being a vigorous upright grower, attaining an average height of from 15 to 18 inches, and branching freely. The leaves have much of the form and texture of those of *B. Veitchii*, but are toothed like those of *B. boliviensis*, while the flowers are of the size and form and possess much of the colour of the former, but are of a darker shade of crimson. We learn from Messrs. Veitch that this is the hardiest of the hybrids they have yet raised, as it succeeds well in a greenhouse, and can be wintered in a cold frame. They state that it has survived with them, out of doors, during a mild winter.—T. M.



BEGONIA INTERMEDIA.

THE POTATO DISEASE.

IT is not my purpose to prescribe a remedy for this malady—that is beyond my power, but merely to make a few observations thereupon. Though much has been said and written on the "Potato Blight," the evil still prevails. Whatever may be its cause, the effects of it are most prominent

during sudden changes of weather, from extreme heat to cold and wet, occurring between the end of July and the middle of August. All agree about this, but here the vexed questions crop up—why did not the malady appear during such weather in former times? and why not in all other countries in which potatos are grown, at or about the same time? It would be idle to imagine that the seasons have changed, and that the change encourages this plague. However, in order to check it, the best plan is to plant early kinds either late in autumn or early in the spring, so that the new potatos may be nearly ripe before the usual period of the blight. That plan seems to be safest both for market gardeners and cottagers; but these have the greater advantage, because they can clear off their crops more quickly than those who require a few potatos only for daily use. Some have recommended late planting for general crops, so that there may be no potatos at the roots before the time at which the blight or mildew attacks the tops is past. That, however, is not to be trusted, because where the pest appears both old and young potato-stems are affected by it; and even sometimes those under glass. I have noticed this both in April and August.

What is more remarkable is that diseased young potatos have been found attached to the old ones stored in dark cellars. Now in such cases "atmospheric influence" on the leaves or stems could not be the cause, for they were not subjected to any. An instance of such cellar potatos came under my notice in 1845, the first season of the great outbreak of the disease; therefore, as those new or young potatos inherited the malady from the old ones, these must have been affected by it the previous season, before the pest was so generally known.

A writer in one of the weekly journals has laid claim to have been the first discoverer of the potato disease, and asserts that the cause is always discoverable on the bad potato before planting, by the aid of a good glass, about the eyes of the potato. What he considers to be the cause seems to be only the effect of the disease remaining from the previous season. However, he professes to kill or cure the malady by dipping the bad potatos in salt brine, and afterwards dusting them with "fresh air-slaked lime."

Some persons think that the late gross-growing kinds stand the disease best. I have myself observed several instances of this, especially during the past season, when on the same plot of ground the second early kinds were nearly all rotten, while the late red sorts were nearly all sound. As regards the lime cure, I lost faith in it after seeing a field of blighted potatos on poor gravelly soil close to the fumes of a limekiln.

For the sake of those who do not know how cellar potatos are grown, it may be mentioned that they are the offspring of tubers planted in sand in dark cellars in spring. I have understood that the Dutch new potatos imported into this country are thus grown. A friend of mine used to adopt the plan, and his master gave him credit for having new potatos before his neighbours, until he was told how they were grown, and after that these potatos were considered to be watery and not fit for table.

Regarding the blight, I have seen more or less of it annually ever since the first visitation in 1845, and still lean to my first opinion that the malady is the effect of a parasitic fungus or mildew on the tops of the potatos, which is infectious and of hidden growth, like all the numerous kinds of mildew. Now as potatos seem to inherit the disease, it may always appear, more or less, according to the state of the weather and the situation and soil on which the potatos are grown. A late or second crop of early kidney potatos, the tops of which were not up until the middle of September, kept free from blight; but I consider such crops to be of little use, because they are liable to suffer from early frosts. I am aware of what scientific men have advanced on the subject of this malady, but I think I have said enough to indicate that there is no certain cure for it; and that we can only trust to the return of more genial seasons to prevent or, at least, to check the sad calamity.—J. WIGHTON, *Cossey Park*.

GARDEN LILIES.—CHAPTER I.

WITH COLOURED FIGURE OF LILIUM TIGRINUM LISHMANNI.

LILIES have always been favourites amongst garden flowers, though from the alternations of taste in floral matters they were, perhaps, a few years since, less generally esteemed than they were in days of yore. At the present time a revival of the fancy for them has evidently set in with so much fervour, that there can be little doubt they will again become exceedingly popular.

None of the true Lilies are indigenous, but we find that so early as the sixteenth century seven kinds had found their way into English gardens; these were *Lilium bulbiferum*, *umbellatum*, *candidum*, *croceum*, *chalcedonicum*, *Martagon*, and *pyrenaicum*. The seventeenth century added *L. canadense* and *pomponium*; during the eighteenth century our gardens were enriched by *L. Catesbœi*, *philadelphicum*, *spectabile*, and *superbum*, and many others were added in the first quarter of the nineteenth century. Gerard in 1597 gives rude figures of the seven Lilies which had been introduced in his day; and his editor, Johnson, in 1636 adds figures of ten more, making seventeen in all, some of which are doubtless now regarded as mere varieties. Miller in his edition of 1771 mentions thirteen distinct species as being then in cultivation; and as a proof that the flower had by that time been brought fairly under the dominion of cultivators, it may be remarked that he notes three varieties of the White Lily (*L. candidum*), "which have accidentally arisen from culture," one of these having variegated leaves, and another double flowers. Of the Orange Lily (*L. bulbiferum*), Miller mentions also three varieties "obtained by culture"; while of the Fiery Bulb-bearing Lily (*L. humile*) he alludes to four varieties; and of the "Martagon" Lily (*L. pomponium*) to no fewer than seven varieties. Of this latter plant, indeed, he remarks that "in the gardens of the florists, particularly those in Holland, they make a great variety, amounting to the number of thirty or upwards," a small proportion of them only being known in England.

In recent times the Lilies have been made the subject of learned dissertations

by Cannart d'Hamale in Belgium, by Duchartre in France, and by Baker in this country. It is the Synopsis of the latter botanist, as given in the *Gardeners' Chronicle* (1871), which we propose to take as a guide in preparing the popular sketch of the Lily family, to which this and some succeeding chapters will be devoted.

Mr. Baker divides the true Lilies—those with squamose bulbs, and a thick bluntly three-lobed stigma—into four groups, which he distinguishes as follows :—

EULIRION, comprising those species with funnel-shaped flowers, having the filaments nearly parallel. Ex. *L. candidum*.

ARCHELIRION, those with expanded flowers, having the ovate lanceolate segments reflexed from near the base, and the filaments much divergent. Ex. *L. tigrinum*.

ISOLIRION, those with erect bell-shaped flowers, having the filaments moderately divergent. Ex. *L. bulbiferum*.

MARTAGON, those with drooping expanded flowers, having the lanceolate segments reflexed from near the base, and the filaments divergent. Ex. *L. Martagon*.

It is in the second of these groups, *Archelirion*, that the subject of our plate belongs, and with this therefore we commence our history.

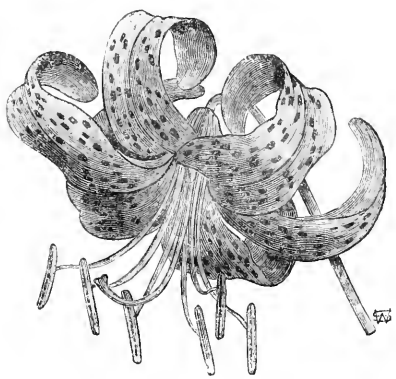
We have just now stated that the *Archelirions* have expanded flowers, and widely divergent stamens. They form, in fact, a set to which the name Open-flowered Lilies may also be applied. The blossoms take a horizontal or more or less drooping position, and their divisions (perianth segments), which are broadest below the middle and thus becomes ovate-lanceolate, spread outwards from near the base, and become more or less reflexed, so as to fully expose the stamens with their wide-spreading filaments. The species referred here are (1) *Lilium tigrinum*, (2) *L. speciosum*, and (3) *L. auratum*.

1. LILIUM TIGRINUM (*Bot. Mag.* t. 1237).—This plant, popularly known as the Tiger Lily, is distinguished from the others of the group by its linear sessile leaves, which are furnished with bulblets in their axils. It grows from 2 ft. to 4 ft. high, and has erect blackish-purple stems, more or less clothed with cobwebby white hairs. The leaves are scattered, numerous, generally spreading, glossy green, linear, with several (5-7) evident veins; and in their axils appear the small roundish or ovate characteristic blackish-purple bulblets. The flowers, which are variable in number, according to the vigour of the plant, form an open raceme, and are of a deep cinnabar-red, marked with very numerous small blackish-purple spots; the perianth segments are lance-ovate, having at the base a groove bordered by two lines of pubescence, about which are scattered a few warts or papillæ. The pollen is orange-red, and the stigma deep purple. This variety blooms in July, some three weeks earlier than the larger forms.

The Tiger Lily is a native of China and Japan, and was introduced to this country in 1804. It is a very distinct and handsome plant, often met with in great perfection in the gardens of cottagers. Of late years several fine varieties have been brought into notice, and these quite eclipse the beauty of the original.

L. TIGRINUM SPLENDENS (*Flore des Serres*, t. 1931-2).—This is a very fine variety, resembling that called *Fortunei* in its habit and style of growth, as well as in the grand pyramidal inflorescence, as many as twenty-five large flowers being, it

is recorded, produced on one stem. The flowers are, moreover, of a still bolder character than in the var. *Fortunei*. The peculiarity of this plant consists in the spotting, which is much bolder than in any other known variety, the spots being fewer and larger, and inclined to become confluent into oblong blotches, while the ground-colour is of the rich orange or cinnabar-red peculiar to the varieties of the Tiger Lily. This plant was, as we learn from M. Van Houtte, introduced from China to the garden of M. Leitchlin about five or six years ago, and



[Flower one-third natural size.]

LILIUM TIGRINUM SPLENDENS.

was by him communicated to M. Van Houtte, by whom it was distributed. Our woodcut figure represents a small plant, with a much less developed panicle than would be produced by a vigorous specimen.

L. (T.) FORTUNEI.—This fine variety was introduced by Mr. Fortune, in compliment to whom it is named. It differs from the ordinary form in its greater stature, in its larger pyramidal heads, and in its more conspicuously cobwebby pubescence. The stems reach from 6 ft. to 7 ft. in height, and are stout in proportion, the upper 2 ft. or upwards forming a broad pyramidal floral panicle, the lower branches of which in vigorous specimens each bear as many as four flowers in successive series. The flowers are proportionately larger than in the older kind, which this altogether eclipses, though the colours are similar, namely, bright cinnabar-red, freely spotted with blackish-purple. This variety was introduced from the province of Chekiang, in China, about 1850.

L. TIGRINUM FLORE-PLENO (*Florist*, 1871, 25, with fig.).—This is a remarkably handsome plant, having much the habit of the foregoing, since vigorous plants produce a fine paniculate head of blossoms. It was imported from Japan

by Mr. Bull in 1869. The individual plants are from four to five inches across, but the perianth segments, instead of forming a single series, as in the type, are multiplied into about six series, and are for the most part opposite, lying over each other in their recurved position like the petals of the hexangular Camellias. The colour is a bright orange-red, densely spotted with oblong blackish-purple spots, which become smaller towards the centre of the flower.

L. (T.) LISHMANNI (*Florist*, 1872, 16, with fig.)—This is a well-marked Lily, evidently of the tigrinum group, though presenting points of variation, and abundantly different as a garden flower in the spotting of the flowers, the ground colour of which is of the usual cinnabar or orange-red, the spots being in this case sparse towards the apex of the segments, becoming both bolder and closer placed towards the base, but stopping somewhat abruptly, so that the centre of the flower is quite free from them, a circumstance which permits of the characteristic furrow and papilla being all the more readily seen. This plant, which comes from Japan, was received in 1871 by T. R. Tufnell, Esq., from Mr. Lishmann, after whom it is named; it was shown at South Kensington in August last, when it obtained the reward of a first-class certificate; and our plate is prepared from the specimen then exhibited. It differs in some particulars from the *tigrinum* type, as the accompanying description of it will show,* but it is evidently too nearly allied to that species to be permanently separated from it. It will probably become as vigorous as the other forms of *L. tigrinum* just noticed, when it becomes better established.—T. MOORE.

DIANTHUS DIADEMATUS PLENISSIMUS.

THIS is an exceedingly beautiful and very useful hardy annual, growing from 12 in. to 15 in. high, and belonging to the type of *Dianthus Heddewigii*, or the Indian Pink. Its usefulness consists in furnishing an abundant supply of very beautiful and slightly perfumed flowers for cutting during most of the summer and autumnal months, even up to the middle or end of October. The blossoms rival in form and in the beauty and diversity of their markings the finest of the Pinks and Picotees of the florist. This result has been secured by pursuing a system of careful selection, that is, by saving seed from only the best marked and perfectly double and well-formed flowers, until the strain is such as to rarely produce a plant bearing single blossoms.

The seed should be sown in pans under glass about the middle or end of March; and the young plants should be finally planted out about the beginning of May in beds or lines where it is desired to flower them. Or, if more convenient,

* Stem erect, green, glabrous, furrowed. Leaves lanceolate, acute, crowded below, broader, shorter, and more scattered upwards, not bulbiferous in the axils, sessile, 4 in. long, three-nerved, with four secondary nerves; bracts short, ovate. Flowers in a terminal panicle, nodding, on simple pedicels, recurved at the tip. Perianth segments, 3 in. long, nearly equal, revolute, with a prominent furrow, and a few lateral papillæ at the base, nearly or quite an inch broad, the sepaline segments with a purplish-green papillose wart at the apex outside; the colour a rich tawny orange, unspotted at the base, then thickly dotted with black spots, some of which are confluent, the apical third of the length almost free. Filaments divergent, about half as long as the segments, orange-coloured, tipped by the chocolate-coloured anthers. Style orange-coloured, about equalling the filaments.—T. M.

seed may with equal safety be sown in the open air early in April, and thus treated it will only be somewhat later in coming into flower.—P. GRIEVE, *Culford*.

GARDEN LITERATURE.

ORNATE in character, Mr. Hibberd's profusely illustrated book, THE IVY,* makes its appearance opportunely as to season, and we give it a hearty New Year's welcome. The Ivy has become a most important decorative plant, not only as regards the extent to which some or other of its forms are made use of, but also in reference to the great number of beautiful varieties which it now offers to our choice—some bold and rampant, adapted to screen unsightly objects, others picturesque in foliage, in habit, or in colour, and adapted to decorate exterior wall surfaces to which hardy evergreens may be attached. A history of the Ivy as a garden plant, was, therefore, likely to be useful and attractive, independently of any literary merits it might possess, and such we find the book before us to be. The historical and literary memoranda supply pleasant reading for leisure intervals; the discourses on the characteristics and uses of the plant point out how it may be utilised; directions for cultivation form an appropriate interlude to a chapter on the species and varieties of Ivy, which is itself followed by a freely illustrated descriptive list of Garden Ivies; the volume closing with selections of the most distinct and beautiful kinds. The only important point on which we are disposed to disagree with the author, is his rechristening of most, or all, of the kinds—and we do this upon principle. With this exception, the work claims our hearty approval; and whilst its interesting contents will commend it to those who are fond of out-door gardening, and to those who take delight in pleasant reading, its elaborately decorated exterior will secure for it admission into the *sanctum sanctorum* of both.

M. Ed. Vianne's PRAIRIES ET PLANTES FOURRAGÈRES (Rothschild, Paris), is a handsome book, which we notice specially in order to invite attention to the excellent woodcut representations of pasture grasses which it contains. The grasses are a most important family of plants, and by means of these illustrations and the synoptical tables, the more important species may be readily determined. There are also good illustrations of other fodder plants, of poisonous plants, and of pasture weeds. In other respects the work rather addresses itself to the agriculturist. Considerable space is devoted to irrigation, and woodcut figures of several different kinds of pumps are given.

M. Bouquet de la Grye has prepared a very useful handbook of FORESTRY, OR SYLVICULTURE,† which is intended to form the first part of a more extended work, entitled *Guide du Forestier*. The present work treats on the various questions upon which the forester requires information, and is clearly written and to the point. The author holds that the study of the art of forestry in its higher

* *The Ivy: a Monograph.* By Shirley Hibberd. Illustrated with Coloured Plates and Wood Engravings. London: Groombridge and Sons.

† *Eléments de Sylviculture.* Par A. Bouquet de la Grye, Secrétaire Général de la Société Forestière, etc. Soixante-dix Vignettes sur Bois. Sixième édition. Paris: J. Rothschild. 1870.

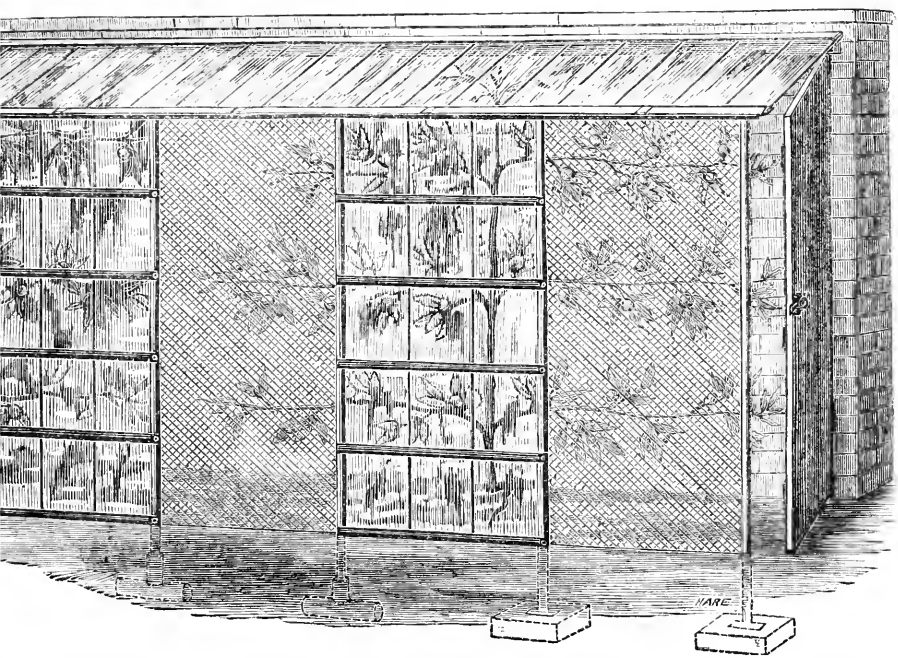
branches should be preceded by that of the various sciences which it calls into operation, and that the administrators of forests should understand such matters as natural history, mathematics, and jurisprudence. The ordinary working forester, however, does not absolutely need so high a training: for him a knowledge of the life of trees and of their culture are the essentials; and it is this kind of information which the little book before us is intended to supply, and does supply in a terse and succinct manner. Turning over its pages, we find it to be divided into three parts: 1. The Elements, containing chapters on earth, air, water, &c.; 2. Physiology, including the important subjects of nutrition and reproduction; 3. Sylviculture, with special chapters devoted to underwood, forests, tree nurseries, various works, as draining, clearing woods, &c., felling, and the ravages of animals. The concluding portion comprises a series of excellent whole-page woodcuts of the principal kinds of forest trees, upwards of twenty in number, accompanied by brief descriptions. It is a very useful book.—T. M.

"THE THIRD DAY COMES A FROST, A NIPPING FROST."

—SHAKESPEARE.

ALTHOUGH there is but little doubt that the climate of this country generally has been ameliorated, to a certain extent, and in certain localities, by the extension of the operations of tillage and drainage, yet the fond hopes of Fruit-growers are still liable to be dashed to the ground by the traditional "nipping frost," just as the prospect of the fruition of their hopes seems highest. An incident occurring so commonly as to have become proverbial, bewailed by gardeners in the time of Shakespeare, and despondently echoed by fruit-growers of the present day, may seem inevitable and irremediable from its duration; but modern ingenuity, impatient of such restraints and difficulties, has done much to avert the pressure of many physical obstacles, and several inventions have been recently put forward to save our crops of wall-fruit from treacherous spring frosts, from cold beating showers of rain and sleet, and from the chilling influence of wintry weather, which in this climate of ours sometimes succeeds a period of spring-tide warmth. Fir boughs, frigi domo, canvas, shutters and elaborate glass copings have each their advocates, as they have their advantages. The simple, economical, and efficient plan of protecting wall-trees, of which an illustration is given opposite, seems to combine the advantages of glass and canvas, and to obviate the objections which exist against each of those coverings as they are usually applied. The coping is formed by attaching Mr. Rendle's zinc sashes or slides to a projecting framework of wood, fastened to the wall, and supported in front by upright poles; the glass is slipped into the zinc sashes, and the glass coping is complete. To give the tree it is desirable to protect every advantage of light, a similar arrangement of glass and zinc slides is easily contrived, and placed perpendicularly in front of the tree. A comparatively narrow strip of glass will admit as much unobscured light as is requisite for the expanding buds, or blossoms, or fruit.

Between each upright frame of glass, either canvas or hexagon netting—the latter is preferable—is strained and secured so as to exclude insects. The trees are thus protected from heavy rains, sheltered from chilling winds, and yet exposed to every favourable influence of weather that may occur, while there is not the daily trouble that attends glass-faced walls of giving air, nor is any time taken up, as when canvas screens are used, in daily rolling and unrolling them.



Another advantage belongs to this plan of wall-covering. It can remain without injury to the trees during the summer and autumn, and while the protection it gives is calculated to improve the fruit beneath it, a perfect safeguard exists in it against the attacks of birds and wasps. The application of an invention like this to Peach and Apricot walls will greatly increase, if it does not ensure, our chances of crops of these fruits, and as a means of preserving late Plums and Cherries from the effects of autumnal storms, its use cannot be too strongly recommended.—William Ingram, *Belvoir*.

EARLY VARIETIES OF FRUIT.

THERE is no subject that is of more real importance to the Fruit-growing and Fruit-eating public than that of procuring varieties of Fruit that will come early to maturity, without the aid of much artificial heat. This is more especially so, if coal, the prime agent in producing an artificial climate, is to remain at anything like its present high price; and I fear there is but little prospect of its ever being cheap again.

The subject of these remarks was forcibly brought under my notice whil visiting some amateur friends last October. Their Peaches were green, and never would ripen; some of their Pears were in the same state; they were lamenting that gardeners and nurserymen did not try to raise earlier-ripening varieties of Peaches and Nectarines. I told them I had seen (at Mr. Pearson's, Chilwell), a Peach called *Hale's Early*, that ripened a month before such as the Bellegarde, Royal George, &c., and I was asked to procure plants of it for them. I made the attempt, but was not successful, as Mr. Pearson had not stock of it. I believe Mr. Rivers has raised both Peaches and Nectarines earlier than the ordinary varieties, and if he or other nurserymen would bring proof of this before the public, there are thousands who would purchase them with avidity.

What applies in the case of Peaches and Nectarines is also most applicable in the case of Grapes. Such as will ripen in a northern latitude, like that of Scotland, with the simple aid of glass, and probably a little assistance from fire-heat while in bloom, would be a great boon.

There are but few situations in Scotland, and in the North of England, where during the two last seasons, peaches on the open walls have been worth the labour of nailing the trees.

Correct comparative data, as to the ripening of given varieties of such fruits as I have named, would be of great value and importance to a host of amateur growers, and to not a few gardeners. There is nothing more disheartening than to have to give all the necessary care and attention to a wall of Peach trees, for a whole year, and then to find the return to be, at best, a few half-ripe fruit just as frost is setting in.—Wm. Thomson, *Clovenfords.*

GARDEN GOSSIP.

THE accounts of the Birmingham Show of the Royal Horticultural Society have recently been wound up, and show a profit of £2,080 11s. 7d., one-half of which goes to the funds of the Society, and the other half to Mr. H. G. Quilter, in whose grounds, at Lower Aston, the show took place. The total receipts were £6,328 6s. 8d., including £2,507 0s. 6d. realised by subscribers' tickets; while the expenditure was £4,247 15s. 1d., including such items as the following:—Prizes and medals, £1,409 16s., about 23 per cent. of the receipts; laying out and restoration of the exhibition ground, £707 10s. 7d., and tents, £485 6s., about 20 per cent.; fees to judges, £119 14s. 0d.; music, £249 0s. 6d.; printing, advertising, postage, &c., £574 15s.; police, £122 18s. The cost of collection was about 3 per cent. of the earnings, and publicity 9 per cent., while the profit was 30 per cent.

—— THE meeting days of the *Royal Horticultural Society* during 1873 have been fixed as follows:—

Jan. 5, Conifers.
Feb. 12, Primulas.
March 5, Cyclamens.
— 19-20. Hyacinths.
April 2, Odontoglots.
— 16, Auriculas.
May 7-8, Roses, Azaleas.
May 21, Rhododendrons.
June 4-6, Great Show.
— 16, Fuchsias.
July 2, Roses (cut).
— 16, Pelargoniums (zonal), special prize competition.
Aug. 6, Petunias.
Aug. 20, Gladioli.
Sept. 3, Dahlias, Asters.
— 17, Zinnias.
Oct. 1, Fungi.
Nov. 5-7, Great Fruit Show, and Chrysanthemums.
Dec. 3, Evergreens.

June 24-28, Great Provincial Show, at Bath.

The *Royal Botanic Society* will hold Spring Exhibitions on March 26 and April 23; Summer Exhibitions on May 14-15, and June 11-12; and a special exhibition (day and evening fête) on July 9. The *Crystal Palace Company* announces Flower Shows on May 17 and June 28, the latter for Roses.

—— Of the *Golden Champion Grape*, respecting the merits of which there has been so much controversy, Mr. Johnston, of Glamis Castle, referring to some fine examples he had still hanging on November 19, though they had been ripe early in July, states, as his experience, that this Grape will not succeed, that is, be free from the spotting which so often condemns it, if grown in a close, moist atmosphere. It must have free ventilation during the stoning period, and this process must be carried out slowly rather than hurriedly, on account of the enormously thick footstalk, which is apt to supply the berries with sap faster than they can dispose of it. At the same time, the temperature should be moderately warm and constant. When perfect, it is a noble grape.

—— Messrs. Lane and Son cultivate, under the name of *Ilex Aquifolium hastata*, a distinct and neat-growing form of Holly, which does not appear to be very common. It is one of the small-leaved forms, of a dark green colour—in this respect, and also in the bluntish outline and paucity of spines, resembling that called scurtica, or scotica, but differing in the pretty constant presence of a pair of basal ear-like lobes, standing at right angles, and which, no doubt, have suggested the name of "hastata." The young wood is dark-coloured, and the leaves slightly twisted. It merits attention as a well-marked and neat-habited variety.

—— In a paper on *Gathering the Cones of Resinous trees*, printed in *Gard. Chron.*, 1872, 1557, Mr. Ellison maintains by illustrative examples that the premature gathering of the seed tends to weakness in the plants. Foreign seed, he remarks, from the native forests, is invaluable when imported in fresh-gathered cones, secured from the trees at the conclusion of the alpine winter; but is not worth having if they have been gathered prematurely.

—— Mr. Laxton's *Double Dwarf Pelargoniums* comprise some highly promising varieties. Jewel would almost pass for a Liliputian Rose. E. J. Lowe, from the white exterior of the petals, has a striking effect in the truss, though it does not open well. Aurora is a very free-blooming, semi-double, bright scarlet variety of the Tom Thumb race, to which all the varieties belong, having none of the blood of the old coarse-growing Inquinans, or Gloire de Nancy type in them. Of these varieties we think Jewel is much the best, being rich and clear in colour, and remarkably full and well formed.

—— It is stated that a new *Tea Rose*, called *Perle de Lyon*, has been raised in France. This novelty is said to be much in the way of Maréchal Niel, only more beautiful, if that be possible, and that it may perhaps supplant both the Maréchal, and the well-known favourite, Madame Falcot.

—— Under the name of *Juniperus excelsa stricta*, the Messrs. Rollisson, of Tooting, grow an evergreen shrub which may be recommended for planting on terraces and in similar situations; its form is pyramidal and elegant, and the colour of its leaves silvery; the young plants are very striking.

—— The *Tilia alba pendula*, which we noted last autumn in the Knap Hill Nursery, may be strongly recommended as an ornamental tree. It is of vigorous growth, and has the good quality of holding its foliage till a late period.

—— We have recently, observes Mr. Rivers, in the 10th edition of his "Rose Amateurs' Guide," lately published, had many methods of *Propagating Roses by Cuttings* given by our gardening periodicals, the greater portion of them oft-told tales, but still interesting, and often useful to the tyro. We have had a "Rose secret" here for many years, and I am not aware that it has ever made its appearance in

print; it originated here, and may be of interest to many cultivators, for its success is certain. About the middle to the end of September prepare your cuttings as follows:—Take shoots of Roses full of life, and vigorous, with say five leaves; remove three of these, and leave two, cutting off the lower part of the cutting near the bud with a sharp knife; then take pots 4 to 5 inches in diameter, and fill them to one-fourth their depth with decayed (a year old) cocoa-nut fibre, then place five or six cuttings round the inside of the pot, resting on it the lower ends, thrust through the fibre at the bottom of the pot, then fill up the pot with the same kind of fibre, and press it well down. A piece or two of broken pot should be put at the bottom of each pot for drainage. Their after management is of great consequence, for on that depends success, or the contrary; nothing can be more simple. Place the pots of cuttings out of-doors in full sunshine, unless the autumn is particularly hot and dry, they can then go in the shade for a week or so. They may stand in this exposure till the end of November, or even later if the autumn be mild; and if in October the weather be dry and sunny, they should be sprinkled with water morning and afternoon, so as to keep the leaves fresh and tolerably green. At the end of November or middle of December, if mild (all depending on weather), the pots should be placed in a frame or cool green-house, and have plenty of air till they put forth their leaves and roots, when they may be potted or planted out. Formerly, as is well known, the cuttings of Pelargoniums were struck in heat with much trouble and often great loss; they are now propagated after the method I have recommended for Roses with unvarying success. This is my Rose secret, to which the Rose world is most welcome. I may mention that Climbing Roses, Hybrid China Roses, the hardy Tea Roses, the Bourbon Roses, the hardy Noisette Roses, and, above all, the Hybrid Perpetuals, are all amenable to this mode of propagation.

—— THE friends of *Mr. Philip Frost of Dropmore* have just presented him with a testimonial, as a memento of his having attained his 50th year of service in the Dropmore Gardens. The presentation took place at Slough, on the 12th ult. The testimonial consisted of a handsome silver cup, value £25, on which were engraved figures of the world-famed Dropmore specimens of Araucaria imbricata and Abies Douglasii. To this was added a sum of about £200, with which the Committee decided to purchase Mr. Frost an annuity. May he live long to enjoy it!

GARDEN WORK FOR JANUARY.

FLOWERS.

DIGGING, manuring, scarifying, renewing soils and composts, or changing the arrangement or form of the flower quarters and beds, is now the chief out-of-door work. Yet a few flowers will cheer our labour; the *Christmas Rose*, the golden *Aconite*, the silver *Snowdrop*, and even in warm nooks the early *Crocuses* and *Tulips*, will gladden our eyes, and perhaps need a little care. The Rose, Aconite, and Snowdrop, when planted in fat patches in a warm corner, deserve a hand-glass or *cloche* in severe weather, to forward the flowers and preserve their fine and delicate beauty. Tulips, too, should be surfaced with spent tan or cocoa refuse, to save their tops from frost-nips as they pierce the soil. Then the earliest Forget-me-not (*Myosotis dissitiflora*), and the *Aubrietias*, with *Violets*, well-grown *Daisies*, and early *Primroses* will be peeping forth, and are much assisted by having the soil stirred gently among them. In open weather the digging of borders should be completed, if not done in the autumn. Beware of sparrows and peacocks among the early-springing bulbs and flowers; the latter will bag a hundred tender Crocus flowers in embryo, and five hundred budding Primroses in a few hours. They must be driven hence. As to the sparrows, there is no better antidote than a thin invisible thread about a foot over the Crocuses, or a liberal application of soot-powder.

IN-DOORS.—All *Bedding plants* ought to rest throughout the month, unless the stock is short of any particular thing; even then little is gained by beginning to propagate too soon. With the increase of light, strength, *i.e.* rooting force or multiplying power becomes immensely increased; and from February to the middle of May almost anything in the way of propagation is possible. As

the different houses advance in temperature for Vines, Peaches, Figs, &c., the budding stuff may gradually be potted off; or better still with *Verbenas*, *Alternantheras*, &c., the store pots and boxes may be placed in heat to stimulate growth; then strike the tops, stimulate again for fresh cuttings, and ultimately throw the old plants away.

In the plant stove 60° to 65° will be hot enough; see that all insects are extirpated before active growth commences; prune all roof climbers, if not already done, and thin the shoots; prepare soil for potting. Start an early batch of *Caladiums*, *Achimenes*, *Gloxinias*, &c. Keep *Allamandas*, *Clerodendrons*, &c., rather dry at present; they will flower the finer when heat, moisture, and more intense light, issue the mandate to loosen the forcibly arrested growth and let them go. Introduce to the forcing-house more shrubs, such as *Azaleas*, *Lilacs*, *Roses*, *Kalmias*, *Rhododendrons*, &c., with *Lily of the Valley*, *Hyacinths*, &c., and keep up a smart growing temperature of from 55° to 65°. Keep the greenhouse and conservatory cool—45° to 50°; water with care and thoroughness: keep the air as dry as possible, else the moisture will spot and mar the beauty of *Camellias*, among which over and under-watering are the chief causes of bud-dropping: little water is needed to enable the Camellia to open its flowers: it is when making wood that it drinks like a willow by the water-course. Many *Heaths* are now greedy of water, as most of them flower and grow simultaneously, which makes all the difference between them and Camellias. Such plants, again, as *Cytisus (Genista)* and *Acacia* are greedy of water. *Chinese Primroses*, too, require free watering, but not a drop should wet crown or leaf-stalk. *Cinerarias* and *Calceolarias* must be kept clear of insects and freely watered—the former with sewage, to give size and brilliancy to the blossoms. *Pelargoniums*—show and fancy—should advance slowly; keep the shoots thin; stop any irregular shoots, and water with care. The Variegated varieties in pots require equal care. The Zonals and Nosegays, so useful for pots should be stopped or grown on, according to the season at which they are wanted: the first batch for late April or early May blooming should now have strong shoots, and be allowed to go on, being kept near the glass. Nothing can exceed the usefulness of these plants for in-door decoration.—D. T. Fish, *Hardwicke*.

FRUITS.

In-Doors.—*Pine-apples:* Keep a steady bottom-heat of from 80° to 85° to plants in all stages; attend carefully to the watering of fruiting plants; maintain a temperature of from 65° to 70° at night, and about 75° during the day, allowing it to rise 8° or 10° by sun-heat; raise the temperature gradually to the plants for summer fruit to about 65° at night, and 75° by day: give the plants a good watering of tepid water, and admit a little air at every favourable opportunity; keep the succession plants steady at a little lower temperature.—*Vines:* Attend to the stopping and tying-down of the shoots in the early house; maintain a temperature of about 65° at night, and 75° during the day, whilst they are in blossom; Muscats require a higher temperature for setting; thin the berries as soon as possible after they are set, and keep a genial atmosphere; avoid too much moisture; nothing is worse than the too common custom of throwing quantities of water on the floors of the house at this season; it may be good practice in the month of June, but not now; keep the borders inside well watered, and see that there is sufficient fermenting material on the outside borders to keep up a nice heat; keep a moist atmosphere in succession-houses until the Vines break; start later houses, beginning with a low temperature.—*Peaches and Nectarines:* The trees in the early house will now be fast swelling their buds and coming into bloom; admit fresh air at every favourable

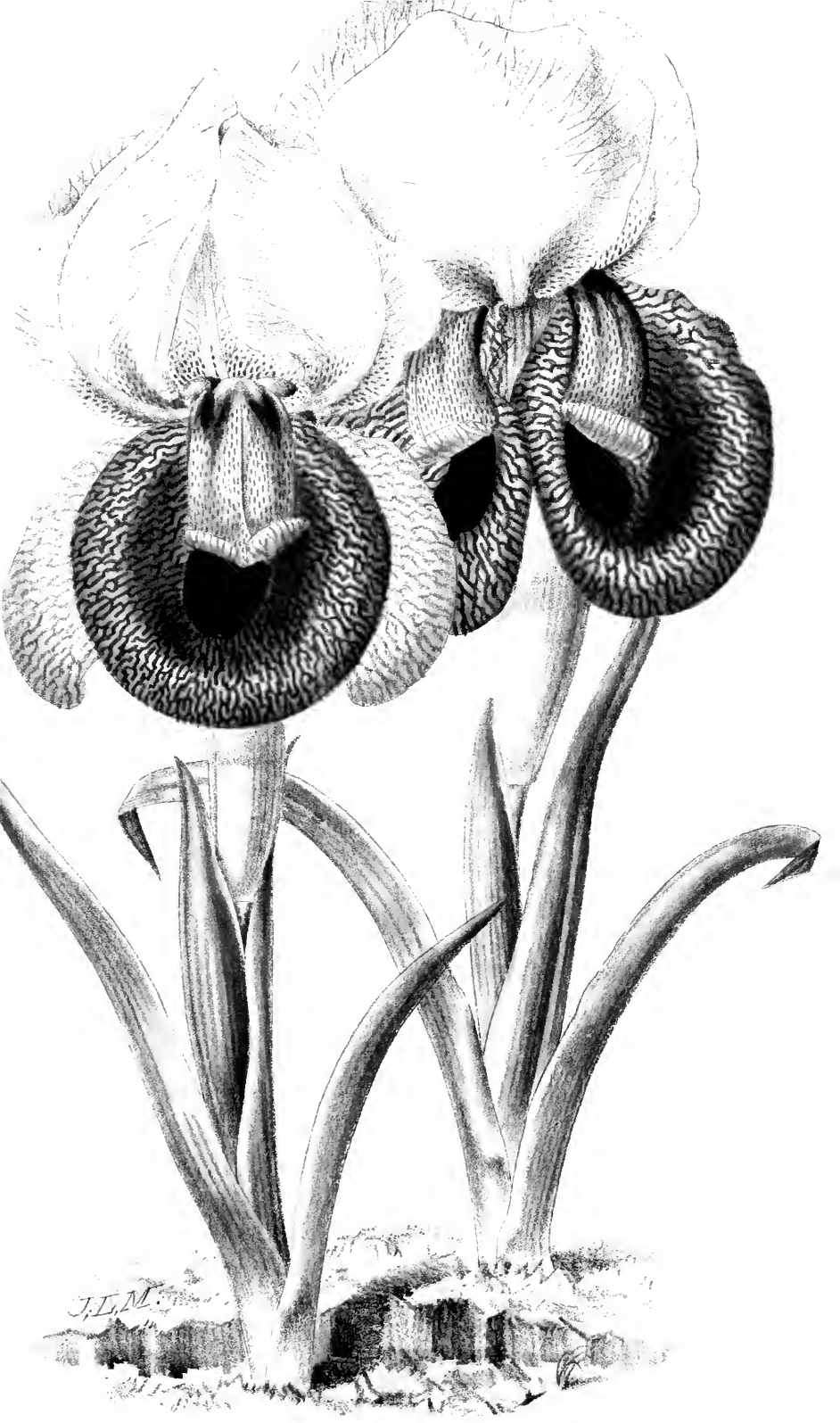
opportunity; maintain a moderately dry atmosphere, and keep the temperature at about 50° to 55° by night, and 65° to 70° by day, allowing it to rise higher by sun-heat; see that the inside borders are kept well watered; start succession houses.—*Figs:* Begin these with a temperature of 50° at night, and 60° by day; give air freely, keep a moist atmosphere, and water liberally after they get into leaf.

OUT-DOORS.—All operations here must depend on the state of the weather. If the ground be frozen and covered with snow, little or nothing can be done, but in the absence of frost and snow, fruit trees may be planted, presuming that the land has been already properly prepared. In planting take care to spread out all the roots, and see that the soil is put in properly about them. On strong soils it is advisable to plant on hillocks raised a little above the surrounding surface, but on thin light soils they should be planted level with or a little below the surface. It is advisable to spread some short litter over the roots. All standards should be properly secured to stakes. Take advantage of mild weather to prune, dress, and nail wall trees; also to prune Standard trees of all kinds. If not already done, tender *Strawberries* should have a good mulching of half-rotten dung, to protect them from injury by frost.—M. SAUL, *Stourton.*

VEGETABLES.

THE operations in this department will be much influenced by the prevailing weather. Advantage should be taken of hard dry frosty weather, to wheel or cart the necessary manure on to all vacant spaces. *Rhubarb* plantations should be well manured, forking the dressing in neatly between each stool without doing injury to any. I object to the customary autumn or early winter manuring of *Asparagus beds*, inasmuch as it seems to retain around the roots an undue amount of moisture, which tends to their decay; besides, frost will in nowise injure them, if they are not covered by this artificial means. Where vacant plots of ground may not have been trenched up during the last two or three winters, it will be well to perform the operation in all practicable instances; put a liberal layer of manure at the bottom of each trench before filling up with soil. Those who may not have sown *Peas*, or *Beans*, for an early spring supply, should do so as soon as a mild open period occurs; *Carter's First Crop Pea* and the *Early Mazagan Bean* are desirable varieties for the purpose; even if they had been got in in November, those sown about this time will not unfrequently come in only a few days later.

Cover fresh patches of *Seakale* and *Rhubarb* in the open ground, to succeed such as have previously been covered; good crowns of either taken up and placed in a dark mushroom-house will succeed admirably. A successional supply of *Endive* and *Chicory* may be placed in a similar situation, to succeed such as is now coming in. Keep up a supply of *Mustard* and *Cress* by successional sowings. A few *Early Frame* or *Ash-leaved Kidney Potatos* should be duly exposed by placing them in boxes in a glass structure, and occasionally sprinkling them. *Cauliflowers*, *Lettuces*, *Endive*,, &c., in cold frames should have abundance of air at all times during mild periods, the lights being taken off during dry winds, if not too cold. Prepare a slight hot-bed whereon to sow *Early Horn Carrot*, and *Wood's Early Frame Radish.* Where no proper Cucumber-house exists, prepare the necessary fermenting materials for the early *Cucumber* frame, and enlist the aid of some horticultural neighbour to sow the necessary Cucumber seeds, in order to supply young plants for planting when the frame is ready, about the 1st of February. Towards the end of the month sow a little *Celery* for early spring use in soups; also *White Spanish Onions* in boxes, if any neglect has occurred in regard to autumn sowing. Place pots or boxes of *Mint* and *Tarragon* in heat for an early supply of green shoots.—WILLIAM EARLEY, *Valentines.*



L. Macfarlane Del et Lith.

F. Waller Imp.

Iris iberica Perryana

IRIS IBERICA PERRYANA.

WITH COLOURED ILLUSTRATION.

ONE of the most striking and curious plants of its extensive family, and one which sooner or later will find a place in every garden, is the *Iris iberica*, of which one form is represented in the accompanying plate. Its gigantic flowers and curious combination of colour, together with its neat dwarf habit, render it as striking as it is pretty. This plant was introduced to English gardens by Mr. T. S. Ware, of the Hale Farm Nursery, Tottenham, who has already bloomed several distinct varieties.

The subject of these remarks flowered during the past season in the open ground. It is a native of the Caucasian Mountains, and is found growing at an elevation of from 6,000 to 7,000 feet. It forms a tuft of glaucous, slightly recurved linear-ensiform leaves, 3 in. to 4 in. long, and produces a stem 4 in. to 6 in. high, surmounted by a large solitary flower. It has proved perfectly hardy, having stood the past three winters without any protection whatever. It seems to prefer a light sandy soil, in which it grows very freely; and it is admirably adapted for almost any position, either on rockwork or in the borders; moreover, it succeeds well as a pot plant.

This variety differs from the type form (as figured in the *Botanical Magazine*, tab. 5847) both in colour and in size of flower, the true *I. iberica* being larger, with the outer perianth segments more erect, and the spots at the base of a deeper colour, while the inner segments are of a yellowish-green colour, covered with wrinkled dark purple reticulated bands, and the disk is much larger and of a glossy black colour. There are many varieties of this remarkable species; and no doubt others will flower during the coming summer.—A. I. Perry, *Tottenham.*

ROSES AND ROSE-CULTURE.

Chapter XV.—On Growing for Exhibition.

ONE of the most noteworthy features in the cultivation of flowers is that it is an unselfish pleasure; in its pursuit we necessarily administer to the delights and enjoyments of our friends, or, at least, such of them as may visit our house and garden; and if we exhibit at Flower shows, these gratifications are extended to and shared in by strangers. It by no means follows, however, that if we grow Roses, we must grow for exhibition; but the adventure is a pleasant one, and if we engage in it, offers an opportunity of measuring our strength and skill against our compeers. Many find infinite pleasure in it, and I shall therefore endeavour to point out briefly the means best calculated to insure success. Good air and good soil are indispensable conditions here; the former depends on locality, freedom from smoke and noxious vapours of all kinds; the latter may be encompassed artificially under circumstances where it may not naturally exist.

We repeat here that the best soil for Roses is a strong, deep loam, well enriched with stable-manure, night-soil, and crushed bones, which should be

mixed in the soil when digging. Supposing the soil to be naturally of this kind, let it be trenched two-spit deep, keeping the best and mellowest of it about a foot from the surface. If the soil is unfavourable, it is best to remove it altogether to the depth of two feet, replacing it with the best strong loam that can be obtained. If the soil be prepared late in summer, the end of October may be chosen as the season for planting. Secure a sufficient number of strong, healthy plants of the most appropriate sorts. When planting cut out all suckers, and shorten injured roots (if any) with a sharp knife; plant carefully, spreading the roots so that those nearest the ground-level are at least two inches under the surface; next fill in the interstices with well-pulverised earth, treading the soil firmly over the roots after covering in. After planting, each plant should be tied to a neat stake in order to protect it from the action of the wind, and if the ground can at the same time be covered with stable litter, so much the better. All is now finished and safe till spring.

In March prune (see Pruning), and as the dormant eyes push forth, rub out one here and there, that the shoots may not crowd each other when fully developed. If the spring be dry, water freely through the growing season, using weak liquid manure, if readily accessible. The manure with which the ground was covered when planting in autumn, should be dug in when pruning is finished, and the ground should be hoed occasionally during the growing and blooming season, that it may be kept in a loose state. So soon as the flower-buds are clearly formed, reduce their number by nipping out with the finger and thumb any weakly backward buds or malformations, which will increase the size of the more perfect ones which are allowed to remain.

The extent to which this practice of disbudding should be carried will depend, on (1) the nature of the variety, or (2) whether it is trusses or single flowers which are to be exhibited. There are some varieties—La Reine and Souvenir de Malmaison, for example—whose flowers are so large and full that they expand with difficulty; such require little thinning, and with such it is sometimes well to remove the *strongest* flower-buds, especially in the first or summer flowering, relying on the secondary or intermediate buds. There are other varieties, beautiful of their kind, whose flowers are small and thinly set with petals; such are greatly improved by thinning early with an unsparing hand. I am here taking extremes; of course there are intermediate flowers, the precise treatment of which a little experience will disclose. As to whether trusses or single flowers are required: if the former, thin sparingly, if the latter, freely, as it is not well to calculate on more than a *single* flower from the same stem.

The grower for exhibition will hardly come near the top of the tree as a prize-taker, unless he grows largely, and to some extent buds his own stocks. Certain sorts of roses throw finer blooms from the single shoot that pushes the first year from the dormant bud, than from any other source. Hence, it is important with the exhibitor to have at least some stocks planted and budded where they may remain to bloom.

The shading of Roses grown for exhibition has been recommended, and is more or less adopted by different exhibitors. With some few exceptions my experience does not favour the practice. The living freshness of colour for which the Rose is so justly prized is tarnished by shading, and the loss to my eye is greater than the gain.

When growing for exhibition, a special selection should be made of varieties in which the first point of merit is form, the next size, and the third substance. A great number of sorts should also be grown, as Roses have their seasons. Many a rose of excellent quality is good or bad for the year, according to whether the spring is warm or cold, the summer cloudy or sunny.—WILLIAM PAUL, *Waltham Cross, Herts.*

HOW TO INCREASE FICUS ELASTICA.

THE vast quantities of this noble leathery-leaved plant that are annually employed in the various purposes of decoration gives importance to any suggestion that may tend to facilitate its multiplication, and at the same time increase its vigour and endurance. Not that this *Ficus* is by any means difficult of cultivation; on the contrary, it is of the easiest possible management, provided that a genial temperature is afforded to it in the earlier stages of growth, as it is important to promote a vigorous unchecked development.

It may interest your readers to know that this desideratum is most surely accomplished by grafting the *Ficus elastica* upon the roots of any of the numerous cultivated varieties of *Ficus Carica* that may be at hand.

Grafting may be performed at any time that grafts are procurable, during the winter and spring months. So quickly and certainly is a union effected, that the mode of grafting signifies but little, so long as the root and scion are fitted to each other, and slightly bandaged. No mastic is required. Any portion of the Ficus with a couple of buds will grow, but when a moderate supply only is required, a sufficiency of scions with terminal buds are easily procurable, by the introduction of a few old stools into a brisk humid temperature. After grafting, plant them singly in small pots, in a light soil, merely covering the stock, and plunge in a brisk bottom-heat, excluding air for a few days by a covering of glass. They will quickly become established, and afterwards will require attention in potting so as to facilitate active growth.

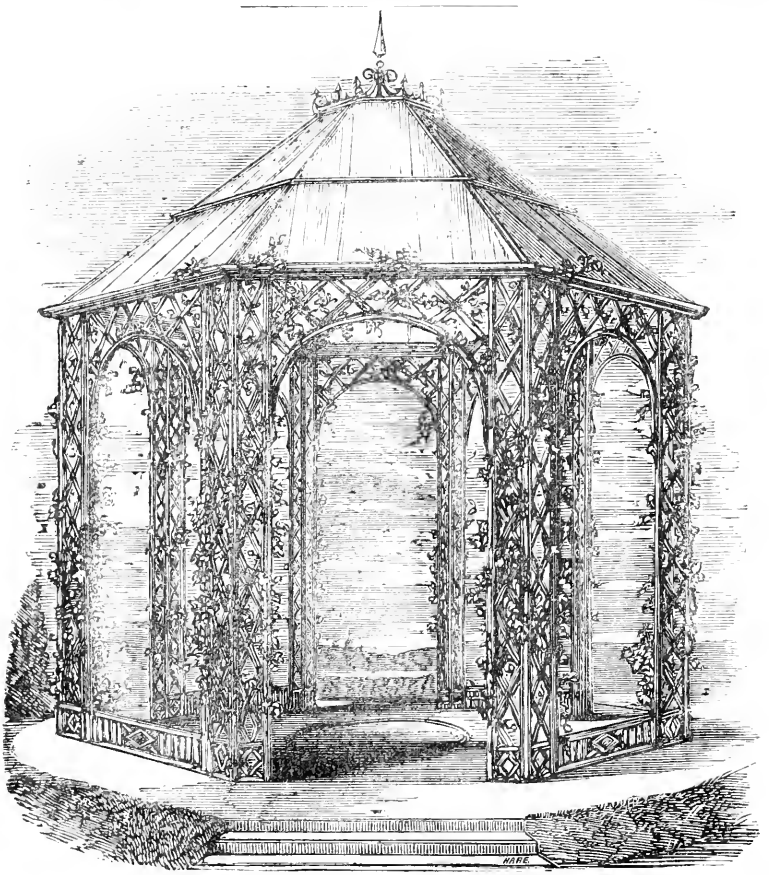
Plants intended for garden adornment should be grafted early in the year; and if properly attended to, will make fine strong plants by planting-out time. From the hardy nature of the stocks, plants thus formed are better enabled to withstand the chilling fluctuations of temperature in the soil, than if they were grown upon their own roots, and at the same time they thrive more lustily.

Exception may be taken to the propriety of grafting the *F. elastica* upon the roots of the *F. Carica*, the former being a stove evergreen, and the latter a deciduous species. They are certainly somewhat incongruous in their nature, and seem unlikely to form the happiest of combinations; however, in practice, I

do not find any verification of these doubts, as in an intermediate temperature the foliage keeps quite fresh, not exhibiting the slightest symptoms of exhaustion. This is no doubt somewhat accounted for by the supply of food afforded from the roots that are eventually emitted from the scion.

The time saved and the vigour produced by grafting are important to those who grow largely for the market. Roots suitable for this purpose, if buried in soil in a cool retarding medium, will keep fresh for a length of time.

The plants are most effective either indoors or out, when confined to a single shoot, and young ones are the most serviceable.—GEORGE WESTLAND, *Witley Court.*



ROSE TEMPLES.

EVERY Rose garden, if of large, or even of moderate size, should be crowned or supported with a Rose Temple, and, indeed, there are few flower-gardens which would not afford some nook or cranny which would be appropriately filled by a light structure covered with climbing roses. Above all things, let these roses be sweet-scented and of graceful growth, so that

if driven for shelter from the noonday heat or a passing shower, the eye may be pleased, and the nose regaled, whilst kept waiting upon the weather. Of the many structures of this kind which I have met with, both *in esse* and *in posse*, I have seen few which contain the desirable attributes of suitability and moderate cost better than that given at the opening of these remarks, and which is designed and can be supplied by Mr. Rendle, of Victoria Street, London, S.W.—Wm. Paul, *Waltham Cross, Herts.*

LEUCOCARPUS ALATUS FOR IN-DOOR DECORATION.

I KNOW not whether your readers generally may be aware that this plant produces its snowy white berries much more profusely from cuttings than when grown from seed. Early in the spring of last year I put in a batch of cuttings, and grew them on all the summer in a cold frame, and since November they have been covered with berries. These with the hybrid Solanums are very showy either for in-door decoration or the conservatory. With a little care the *Leucocarpus* forms nice pyramids, while the *Solanums* form either bushes or low standards, and when well grown they are all really pretty objects.—John Clark, *Studley Royal.*

ON BARKING AND DRESSING VINE STEMS.

I AM of opinion that the system of annually peeling the bark off the Grape Vine after pruning is not a necessity; and, indeed, if it were a necessity, the operation is frequently performed in such an injudicious or improper manner as to be positively injurious to the health of the Vines. If gardeners and others are to be guided in their operations by the natural course of things, and this I do not doubt, it will not be denied that it is a most unnatural process to set about peeling the bark from the vine stem so closely that nearly all but the inner bark is taken away, and the Vine does not look like a Vine at all; but many do it. I have heard arguments in favour of the practice, but they have not contained sufficient proof of its merits to make me a convert to the system. If I judge correctly, the functions of the bark are of a very delicate nature—particularly so those of the inner bark or liber, as it is called, through which the returning sap is almost exclusively conveyed. Therefore I hold that the outer bark must have some relative influence on the inner one, and is at any rate a great protection to it during the performance of its important functions. My idea is, and always has been, that to peel so much of the old bark off as to lay bare the inner layers or tenderest portions, is doing the Vine material damage, and increasing its tendency to be injured by atmospheric influences.

Doubtless it will be said that hothouse Vines being under protection by the glass, are not likely to receive injury from the latter source, but this I very much doubt, as the conditions make them tender. I recollect that a few years ago, in a house of young Vines planted so thickly that two of their number could be dispensed with in course of time, I determined upon trying the experiment of peeling the

bark off as above described, which I did for three seasons, and these two Vines ceased to swell or enlarge in the stem like the others. Whether rightly or wrongly, I attributed the difference to this cause, and I believe there are other gardeners of the same opinion. I think once in two years is often enough to give the Vine a dressing, and even then only the rough or loose bark should be taken off, and that which clings fast to the stem, instead of being torn or peeled off, should be left till the Vine exhibits a natural tendency to dispense with it.—THOMAS RECORD, *Victoria Park, Maidstone.*

LEICESTER RED CELERY.

THIS is a new comer, quite a stranger amongst us; but when its merits are better known, it will be welcomed as a real acquisition. One year's experience of its qualities is sufficient to convince me that we have here got another genuine article, vastly superior to any variety with which I am acquainted, though every one of reputed merit has passed through my hands. It may be said that I am an interested party: nothing of the kind: my only object is to bring it under the notice of the public. For my knowledge of it I am indebted to the kindness of Messrs. Harrison and Son, of Leicester, who during the spring of last year sent me a packet of seed for trial, and such are the results. The habit is very decided, stocky, and dwarf, so that it can be easily distinguished from any other kind. The foliage is deeply cut, and slightly drooping at the extremities. The tissue is very solid, crisp, and highly flavoured. This is not my opinion only, but has been endorsed by every one who has tasted it.

As a general rule, Celery keeps badly this season; the all but incessant rain is making sad havoc everywhere, so that by the end of February there will scarcely be a sound head left.—ALEXANDER CRAMB, *Tortworth.*

CHATER'S NEW HOLLYHOCKS.

MR. CHATER stated, in the introduction to one of his catalogues, that it was in the year 1846 he sent out his first selection of new and improved Hollyhocks, taking up the work of improving this flower at the point where it was dropped by the late Mr. Charles Baron. Since then Mr. Chater has stedfastly stuck by this noble flower, and most of the new Hollyhocks now annually distributed, originate at the Saffron Walden Nurseries.

Having had an opportunity during the past summer of looking through Mr Chater's collection when the plants were in the full flush of their floral beauty, I am able to speak somewhat authoritatively as to the value of the new varieties he is offering this season. They are more numerous than usual, a batch of eleven varieties being announced. Arranged alphabetically, they run as follows:—*Arthur J. Dean*, glowing crimson, tinted with a livelier paler hue, a very fine and bold flower, and forming a massive spike. *Black Gem*, a splendid dark glossy maroon flower of great beauty and finish, producing a fine spike; this variety was announced for distribution in 1871, but had to be withheld from sale owing to

the limited stock. *Emperor*, crimson-maroon, a very fine and full symmetrical flower, and of a very telling hue of colour. *Ethel*, silvery peach, of a delicate soft hue; this will be most effective in the form of a spike; a row of plants of this variety was a charming sight, the habit of the variety being remarkably good, and the spikes of great depth. *Fairy Queen* is another beautiful flower, being of a silvery rose hue, suffused with carmine, and like the foregoing, forms an excellent spike. *Jessie Dean*, clear apricot, tinted with rosy salmon as it acquires age, and very fine in form and substance, is a great favourite with Mr. Chater, who commends it highly. *Luna*, straw, tinted with a deeper hue, is a good addition to the pale yellow flowers, and will make a fine spike for exhibition purposes. *President* is of a yellowish buff colour, the flowers becoming tinted with rose with age; this also is of excellent quality. *Prince Arthur* is of a dull red, yet not without some brightness of hue, and forms a good show flower. *Pauline* promises well as a white flower, but has the chocolate base peculiar to other varieties of the same type; it is both distinct and good. The last, *Victor*, is probably the finest flower of the batch; it is of a very bright rosy red hue, and so full in substance that a pocket seems almost impossible; whether shown as single blooms, or in the spike form, it will always be a favourite with exhibitors.

Some yearling flowers were of great promise, and of such excellent quality that it did appear as if the *ultimatum* had been reached in the improvement of the Hollyhock. And yet there can be no limit to the work of perfection, for present attainments are but a prophecy of unrealised advances.—R. DEAN.

THE APPLE: ITS CULTURE AND VARIETIES.—CHAP. II.

HAVING drained and prepared the ground for planting, which operations, by the way, ought to be performed in October, in order to secure every possible advantage, it is necessary to take into consideration the most desirable mode of training, and in doing so we must be guided by the amount of space at our disposal, combined with the quantity of fruit sought to be produced. In a limited space it would be best to adopt ESPALIER training, as the best possible mode of obtaining a fair supply of fruit without taking up much room; but with a sufficient space at command, say six feet from the walk, PYRAMID or BUSH training will afford a better chance of obtaining a larger supply of fruit. Of these two, the Pyramid is to be preferred before the Bush, because while the bush is developed laterally, the pyramid is developed vertically, and consequently affords an opportunity of exposing more wood and foliage to the direct action of the sun and other beneficial atmospherical influences, whilst it occupies only the same amount of space, or, to be more exact, covers only an equal amount of surface.

It may be advisable, for the better guidance of Amateur cultivators, to give here a simple diagram of each of these leading forms, in which A represents the natural ground-level, and B the surface as raised after planting. It will be seen that fig. 1, the Pyramid, has a central stem rising vertically, called a leader, or the leading shoot, with side branches diverging from it, each of these being, as it were, dependent upon it, because the sap which nourishes them must all pass through it.

On the other hand, fig. 2, representing the Bush form, shows no central leader, but all the side branches diverge more or less from a common centre, and thus a series of leaders independent of each other is developed, all these members contributing to the formation of a compact bush.

In instituting a comparison between the relative advantages of these two modes of training as regards the purposes of the Amateur, it may be well to observe that a symmetrically-formed Bush tree on the Paradise stock may be kept within very close bounds, so that every branch may be reached without difficulty from the ground-level; but a Pyramid may with great advantage be allowed to run up from ten to twelve or fifteen feet in height, a degree of development which, while securing a much larger amount of produce, will also entail a greater amount of trouble in pruning and other manipulations. Hence the object in view must be taken as a guide in determining which is the most eligible mode to be adopted.

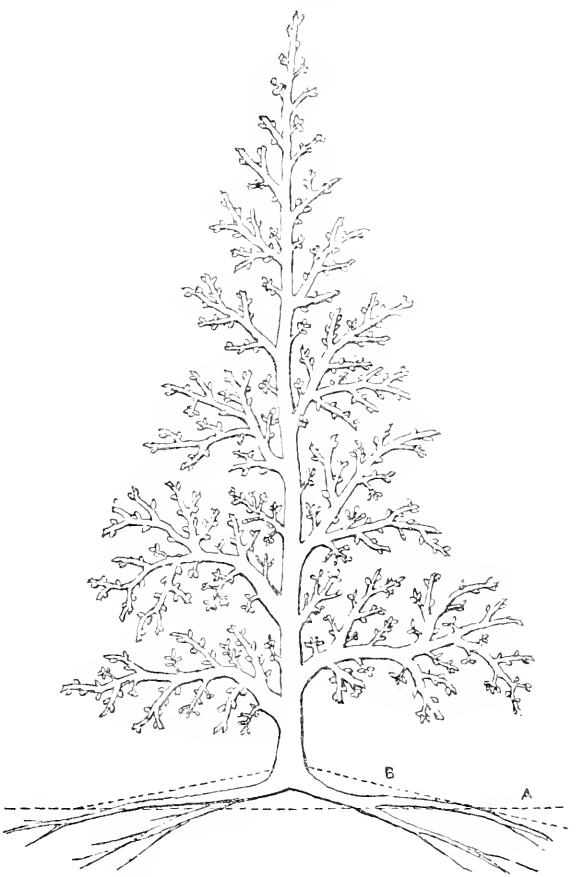


Fig. 1.—Diagram of Pyramid Tree.

In addition to these three modes of training, there is also the Cordon, a system of comparatively recent introduction amongst us, but which is very applicable to the purposes of Amateurs, and is also worthy of adoption in other than limited spaces. As, however, the training is in this case conducted on a similar principle to that of the Espalier, I will leave the consideration of these two modes for the present, and proceed with the selection and planting of Pyramid and Bush Trees.

Taking into consideration the fact that the great object of the Amateur is to

obtain the best returns from limited spaces, it is desirable that he should understand the economy of obtaining trees which should begin to make a return o fruit at once. The time, trouble, and expense of bringing trees into that state is so great, that it is not worth his while to train such trees for himself, more particularly on the same ground where they are to remain for good, because by the time the trees are brought into a bearing state, the soil will be very much exhausted, and will require a considerable addition of new material. If, therefore, the training is attempted, it ought to be done elsewhere, in order that the trees may have new and unexhausted soil to begin with when they are planted in their permanent situations. At the same time, I would impress upon the mind of the Amateur that it is a mistaken idea to suppose, as some do, that by planting maiden trees at a low price, money will be saved; it may be so in the first instance, but time, valuable time, is lost, and after all, the Amateur grower may perhaps get one or two trees out of several, as good as he could purchase at once, in any respectable nursery where such matters are really studied, for half of the money value which that of his own training must have cost him, time being saved into the bargain. *Verbum sat sapienti.*

It is difficult to describe the considerations which ought to guide an inexperienced person in the selection of trees. A practical hand, or one who has had to do with fruit-tree management, can see at a glance whether a particular tree is likely to answer the purpose required; but the uninitiated may be deceived by appearances, or led astray by plausible representations. He will not, however, be very far wrong if, taking the diagram fig. 1 as a guide for the framework of a Pyramid, he selects a tree with a clean stem, five feet high, well furnished from the bottom upwards with healthy side branches, which have been properly shortened and brought into a bearing state, and, moreover, takes especial care to eschew all trees that show evidences of a tendency to canker.

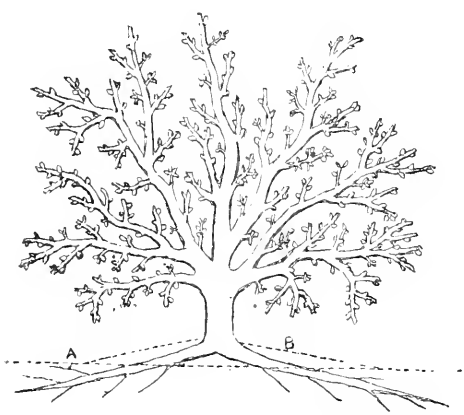


Fig. 2.—Diagram of Bush Tree.

To ensure such trees being in a bearing state, it is necessary to stipulate that they should have been assisted by frequent liftings and replantings to check luxuriance, and induce fruitfulness. The mere pinching-back of the shoots through the growing season will not always have the effect of inducing the formation of fruit-buds, although it does influence root-action and checks the tendency to make growth. But lifting and replanting bring into operation another law of nature, according to which a threatened life seeks to perpetuate itself by

putting forth fruitful buds for the reproduction of its kind. On this point are hinged all the pruning operations, whether of root or branch, by which man seeks to control the natural tendencies of the trees. If we plant an Apple tree under favourable conditions as to space and soil, and leave it alone, it will, if on the natural or free stock, exhibit its natural tendencies in the development of a large and strong framework of wood; and having thus exhausted its superfluous energy, it will gradually merge into a fruit-bearing condition. But then this is the work of years, and requires large spaces for its accomplishment. The object of pruning and lifting, is to obtain similar results in less time, and in a more limited space.

It will be as well to observe here, that the future size of the trees will depend upon the kind of stock on which they are worked; so that if it is desired to retain them as compact trees of a reasonable height, the Paradise Stock must be adhered to: but if space will allow, and the operator has leisure to attend to their requirements, it is a very profitable method of cultivating Pyramids to buy them on the free stock, taking care that they have been often moved. These trees will require a much more stringent attention to root pruning than those on the Paradise, but they may be allowed a more free development of wood, and may run up twenty feet or upwards, by which means a large quantity of noble fruit may be obtained—provided always that as long as they remain of a reasonable size, they are lifted and replanted every alternate October, and that when they become unwieldy root-pruning without lifting is continued. Of course, summer pinching and winter pruning must be followed up simultaneously with these root manipulations.—John Cox, *Redleaf.*

CHRYSANTHEMUM CULTURE AND SELECTION.

THIS showy autumn flower has been somewhat overlooked in the pages of the Florist, but notwithstanding this, and the fact that its culture is much neglected, it does more than any other plant to enliven our greenhouses and conservatories during the dull and dreary winter months; moreover, whilst these are in flower, there can be no lack of material for bouquets, or for decorative purposes indoors.

There are two classes of growers—those who grow for exhibition, and those who grow merely for purposes of home decoration. The Chrysanthemum is one of the easiest of all plants to cultivate, but it requires a good deal of attention during summer, when other work is pressing, and at this time it is frequently neglected. The growers for exhibition must be very attentive to their plants, taking care that no check is experienced during the whole period of their growth; and also that they are grown to as large a size as possible, compatible with the quality of the flowers. On specimen plants, the flowers should be of good quality, and the foliage healthy. One frequently observes the base of the stems bare of foliage, that which may remain being of a sickly greenish-yellow hue; fine flowers are out of the question on such plants. Decorative plants for the

greenhouse do not require to be of large size, small and medium-sized specimens being often the most useful for furnishing: but healthy plants, with flowers of superior quality, are always desirable. Young plants propagated from cuttings any time during February will make the best medium-sized specimens, and for all purposes these are much preferable to plants obtained by the clumsy method of dividing the plants. I insert each cutting separately in a small thumb-pot, and place the pots in a hot-bed, where they can have just a very little bottom-heat. In this position the cuttings will soon form roots, and when this is the case plenty of air may be admitted to them. When the plants are fairly established, remove them to a cold frame or pit; they will require to be repotted as soon as the pots are filled with roots, and should be kept in the cold pits or frames until the end of April, but during favourable weather the lights should be entirely removed, so that when the plants are turned out of doors, as they should be at that time, they may suffer no check to their growth. Repotting must be attended to as required. The Large-flowered section should be bloomed in 11½-in. pots, 8½-in. ones being sufficiently large for the Pompons. The potting material should be composed of good turfy loam, in which clay predominates; to this may be added a fourth part of rotted manure; and a ten-inch potful of powdered oyster-shells to each barrow-load.

The treatment the plants receive during their growing period will depend on whether they are grown for specimens or for the quality of the flowers; also to the section to which they severally belong. Those intended to form specimen plants either of the Large-flowered Chinese varieties or the Pompons, should have the growing shoots stopped three times during the period of their growth; and the shoots should be tied to sticks as they progress, to prevent their being broken off by the wind. If very large flowers are required, such as are seen at exhibitions, a different course of treatment is necessary; the plants then must not have the leading shoot stopped at all, and two plants may be grown in an 8½-in., or three in an 11½-in. pot, each plant being allowed to bear on an average about three flowers. The side shoots should be removed during summer; and in autumn the plant will branch into three shoots near the top; the leading bud on each of these shoots should be saved, and all the others removed. I have had flowers five inches in diameter grown in this way. The varieties named Queen of England, Empress of India, Prince Alfred, and Princess of Wales produce the largest flowers. The Japanese varieties should be grown in a somewhat similar manner to the Large-flowered section. I merely pinch the point out of the young plant; three or four shoots will then be produced, which as they grow up should be tied to separate sticks. The quaint and striking forms of the Japanese flowers are most effective on plants trained in that way. All the varieties are much benefited by being watered with liquid manure as soon as the flower-buds are formed. The plants should also be removed into the house early in October, as after this there is a chance of their being injured by frosts.

New varieties have not been brought into prominence during the last year or

two. Railway speculation and extension have scattered the fine collection of the Messrs. Salter, of Hammersmith, from whom a batch of new varieties was looked for annually, there being always amongst them something good. The Messrs. Veitch, of Chelsea, have "taken to" Chrysanthemums; and the lovers of this class of plants found in their conservatory a treat of no ordinary character, when the gorgeous blooms of the Large-flowered section were seen intermingled with the handsome glossy foliage of the permanent Camellias. Mr. Forsyth, of Stoke Newington, grows an extensive collection, and has some new varieties to send out, but none of them were in condition at the time of my visit; that named "Hero of Stoke Newington" was the most promising. I append a list of the very best flowers in each section.—J. DOUGLAS, *Loxford Hall Gardens.*

LARGE-FLOWERED.
Annie Salter.
Antonelli.
Aurea Multiflora.
Beethoven.
Beverley.
Blonde Beauty.
Cherub.
Empress of India.
Eve.
General Bainbrigge.
Lady Slade.
Guernsey Nugget.
Her Majesty.
Iona.
Jardin des Plantes.
John Salter.
Lady Harding.
Le Grand.
Little Harry.
Lord Stanley.
Miss Hope.
Miss M. Morgan.
Mr. Gladstone.
Mrs. George Rundle.
Plutus.
Prince Alfred.
Prince of Wales
Princess Beatrice.
Princess of Teck.
Princess of Wales.
Queen of England.
William Edward.
Yellow Perfection.

JAPANESE.
Comet.
Dr. Masters.
Elaine.
Fair Maid of Guernsey.
Grandiflorum.
James Salter.
Jane Salter.
Meteor.
The Sultan.
Pyramidale.
Red Dragon.
Bronze Dragon.
The Daimio.
The Mikado.

POMPON.
Adonis.
Cedo Nulli.
Drin Drin.
Golden Aurore.
Golden Cedo Nulli.
La Vogue.
Lilac Cedo Nulli.
Mdlle. Marthe.
Mustapha.
Sainte Thais.
White Trevenna.

ANEMONE POMPON.
Antonius.
Astrea.
Firefly.
Mdme. Chalonge.
Mdme. Montels.
Marie Stuart.
Miss Nightingale.
Mr. Astie.
Mrs. Wyness.
Peri.
Sidonie.
Zobeide.

ANEMONE LARGE-FLOWERED.
Empress.
Fleur de Marie.
Glück.
Margaret of Norway.
Miss Margaret.
Prince of Anemones.
Princess Louise.
Mrs. Pethers.

ON THE SELECTION OF APPLES.

No doubt, some readers of the FLORIST AND POMOLOGIST will be ready to say that we have had sufficient on this head of late; but as the Apple is one of the most useful of fruits, and one of great interest withal, I trust you will allow me to make a few remarks on a few of the leading sorts of this locality—the generality having been raised in this neighbourhood, and not having been mentioned in the lists you have printed.

I feel rather surprised at so many growers recommending LORD SUFFIELD; it is certainly a fine-looking variety, and I have seen it exhibited over 20 oz. in weight; but no one can say it is of good average quality; it is precocious, large, and free-bearing, but will not keep, sinks very much in cooking, and is very

Maranta (Calathea) Makoyana.

tender, and not adapted for carrying to market. It is a variety that soon becomes exhausted, and the early planted trees of this sort have been headed years ago, and worked with other varieties. It was raised in the neighbourhood of Middleton, Manchester, from the Keswick Codling, but is inferior to that old favourite in every point except that of size.

Potts' Seedling is a first-class kitchen apple, worth a place in the most select collection. It is handsome, free-bearing, of good size, keeps well until January or February, is a good cooker, and in quality is not easily surpassed. This was raised in the Ashton district.

Grenadier is also a fine kitchen apple, and will keep longer than the last-named. It makes a fine standard, grows to a good size, and is also of good quality. This was raised in the same locality.

Burgess, or Ringer, is another sort raised at Ashton-under-Lyne. It is a free bearer, of good size and good quality, and will keep till January or February.

Lord Grosvenor is held in high repute about Manchester. It is a very fine handsome kitchen variety, and is not mentioned in the lists. I am not certain where this originated. It is preferable in appearance to the others, but I have not tasted it, and can say nothing as to its keeping, though friends speak highly of its qualities.

Wellington is a first-class kitchen apple, of fine flavour, nearly equal to a Ribstone pippin. It is considered preferable to Blenheim Orange by many persons, and will keep until March. It used to be much grown in Nottinghamshire, and was always considered a first-class apple in the market; it is of medium size.

"Last, but not least," is one raised in Ireland, named Ecklinville Seedling, far superior to Lord Suffield, and one of the finest apples grown. Its quality is first-rate, and take it all in all, I consider it one of the finest kitchen apples we have, and should advise any one who may be planting to secure it, if he possibly can.—John Walker, *Tower Hill Gardens, Worsley, Manchester.*

MARANTA (CALATHEA) MAKOYANA.

WITH AN ILLUSTRATION.

Of the many beautiful *Marantas* or *Calatheas* which are now to be found in cultivation, this is certainly one of the most lovely. To the well-marked and picturesque colouring, which is the charm of such noble species as *M. Veitchii* and *M. Lindenii*, the subject of these notes adds a peculiar neatness of habit as well as refinement of character which is all its own. The markings, moreover, which are highly ornamental, are quite dissimilar from those of any of its allies, while the well-contrasted colouring is most effective, and secures it a place in the first rank of ornamental plants.

This plant, which was first introduced to this country last autumn, is a native of the Brazilian province of Minas Geraes, whence it was sent by M. Emile Wittig to the collection of MM. Jacob-Makoy et Cie., of Liége, and it has been

named in compliment to M. Makoy by Professor Morren, who has published a coloured figure in the *Belgique Horticole*. It has elliptic or ovate leaves, which are described as being from one to three feet high, including the slender cylindrical petioles, which are strumose at the apex. The leaf-blade is coloured in a very peculiar way: the ground-colour, except towards the margins, where it is dark green, being of a very pale straw-yellow, and when closely examined is seen to be transversely striate between the principal veins; these transverse markings are, in fact, the slender green veins, while the tissue between them is colourless, and hence arises the peculiar striated appearance, which is very well shown in Mr. Fitch's accompanying figure, and more distinctly on the enlarged fragment on the lower part of our plate. On this pallid ground, a series of oblong, often stipitate dark-green blotches, and of which a larger and a smaller one generally alternate with each other, are displayed. These markings, as in the case of those which occur in *M. ornata* (Moore), have the appearance as if a frond of some dark-green pinnate fern had been impressed upon the pallid surface. The dark green of the upper surface is replaced beneath by a reddish-purple colour, the intervening portions being pallid, and, in fact, semi-transparent, traversed by the parallel slender coloured veins already alluded to. The surface of the leaf is smooth and shining, and the two sides of the lamina are unequal. The flowers do not appear to be known, so that it is uncertain to which of the two intimately allied genera, *Calathea* or *Maranta*, the plant really belongs; we use the name *Maranta*, as being the most familiar in gardens for the extremely interesting group of which the present subject is a novel representative.

Amongst our ornamental-leaved stove plants this must be admitted to be a most welcome addition. It is as easily grown as the rest of the family, and judging from its habitat, it will probably not require an excessively high stove temperature.—T. MOORE.

GARRYA ELLIPTICA.

THE GARRYA, named after Mr. Garry, of the Hudson's Bay Company, the friend of the botanist Douglas, is perhaps as distinct and useful an evergreen shrub as any that have been introduced into this country; but, nevertheless, it is not so well known by the general garden-loving public as it should be. It may be said that there is a want of brightness in its inflorescence, and that this is a drawback; but so very distinctive are its characteristic features, that this objection cannot well be supported. We were wont a few years ago to treat the Californian *Garrya elliptica* as a semi-hardy evergreen only, and so planted it against sheltered sunny walls. In such a position it is no doubt an exceedingly handsome shrub, when the peculiar elongated catkins of the male plant have reached their full development—oft-times 8 in. or 9 in. long, and the numerous fringe-like whorls of tiny flowers ornament their length from the tip to the very base. In this condition the general aspect of the plant is distinct from that of any other member of the vegetable kingdom. Experience, however, proves that we

have here a perfectly hardy evergreen of a most permanent character, suitable indeed for clothing a wall if desired for that purpose; but also forming a very handsome border shrub, and as such it should be grown in every collection of hardy out-door plants. The leaves are of a dark green, very permanent, and oval or elliptical in form, as the name implies.—WILLIAM EARLEY, *Valentines*.

VINES AND VINE-CULTURE.—CHAPTER I.

PROPAGATION.—The Vine is a plant of most simple and easy propagation, roots being very freely and readily produced from every portion of its stem, if only it be placed under favourable conditions. Let the natural or proper roots of a Vine become disorganised, and immediately the whole stem, if in a humid atmosphere, will become clothed with roots, which hang from it like a long beard. These are generally called air roots, or adventitious roots, but would, if allowed, fix themselves in the soil like the ordinary roots.

Thus nature gives us the first lesson in the art of propagating the Vine. We are by this means, at least, shown that roots are very readily produced from the old or ripened wood. But never under any circumstances do we see roots being produced from the young or growing wood; and although by great skill and care a few plants might be so propagated, the quantity would be quite infinitesimal.

Various methods of propagation by means of the ripened wood are or may be adopted, namely, by Layers, by Cuttings, and by Eyes; also by Budding, Inarching, and Grafting.

1. *Layers.*—This is the most primitive method of all, and might, indeed, be termed the natural method. A branch from some cause touches the ground, and it takes root; it is cut off, and there we have a new plant. It is at best a rough and clumsy method of increase, so far as regards the vine, and is only resorted to by those who have little confidence in their skill in the art of propagation, or but slender means for accomplishing it. For the information of those who may wish to practise it, the mode may be thus described:—Take a branch of the ripened wood, and bend it down so that the part at which it is wished to have the roots emitted is slightly buried in the soil, the point being again inclined upwards. With a stout peg fasten it firmly in its place. It is not necessary to cut the stem in any way, as roots will be emitted very freely without this, if the soil is kept moist. When it is found that roots have been produced, the layered portion may be partly or wholly severed from the parent plant. The Vine stems may, of course, be layered either into pots or into borders, as may be required. Pots with soil in them may also be suspended for the more convenient placing of the shoots for layering. A not uncommon practice is to lead the shoot through the bottom of the pots, which is then filled with soil, into which the vine readily takes root, and when rooted is dissevered. Very strong Pot-Vines are obtainable in this way. Again, damp moss or any other similar material may be tied round the stem, and roots will readily be produced from the parts thus covered, so that plants may be thereby obtained.

Fig. 1.
VINE CUTTING.

2. *Cuttings.*—This term is applied to Vine shoots having several buds or eyes, as shown in fig. 1. This mode of increase is that generally adopted for the propagation of the Vine in the vineyards of all the great vine-growing countries, where they are required by thousands: but it is rarely made use of for the Vine in this country. We, however, adopt much the same method in the propagation of our Currants and Gooseberries. The cuttings are selected and cut into lengths of from 8 in. to 12 in., leaving usually attached a small piece of the two-year old wood—a "heel," as it is termed. The French term such cuttings *boutures par crossette.* The *Vignerons* are, however, not very particular as to the quantity of this old wood which is left, or, indeed, whether there is any left, and it is quite immaterial. The lower eyes or buds should be cut out, leaving only two or three at the top of the cutting. In the vineyards these cuttings are planted in the ground at once, in small trenches, and treated as permanent plants; but as I only allude to them here as a mode of propagation, it is unnecessary to follow them further. It is a method which has not been, and will never be, much practised in this country.

3. *Eyes.*—By this term is meant single buds of the ripened wood of the previous season's growth. This is the mode of propagating the Vine almost universally adopted throughout this country, and it is by far the best; it is, however, only available for practice under glass, so that it is suited to our necessities, and could not be followed were we obliged to have recourse to open-air propagation. Fig. 2 shows the eye as prepared for planting. There is no art or skill required in the preparation. The rule is to select always the most perfect eyes from the best ripened wood of Vines that have been ripened early; such buds will be found to start much more freely than those from later ripened wood. It is the hard firm wood with the firm plump eyes that have to be looked for, where a stock has to be raised, in preference to the large soft wood, with seemingly forward eyes. It is well therefore to be somewhat particular in selecting the eyes, so that everyone of them may be depended on; this is far better than putting in a great quantity, and then having to throw the half of them away. Having the wood selected, proceed to cut out the eyes (as shown in the figure), about one inch or a little more in length, that is to say, about half an inch on either side of the eye. Some persons prefer cutting the wood straight across, whilst others prefer a slightly slanting cut. I rather prefer the latter, but it matters very little. Some consider it of great importance to cut a small piece off the wood on the side opposite to the eye, but I have not observed any benefit from so

doing. The callus is produced below the bud, and generally first on the upper side, *i.e.*, the same side as the bud; it is seldom formed directly opposite to the eye, excepting when cut very closely, and never beyond or above the eye. The fact is, the roots are produced independently of the eye, from any portion of the stem having an eye or bud above it, but most freely, of course, where the cut is made; and all that is left above the bud is inert, and dies away. There is no advantage therefore in leaving any length of wood beyond the bud.

Fig. 2. VINE EYE.

A good season for "putting in the eyes" is any time during January or February. The earlier the operation is commenced the earlier, of course, can the young Vines be finished off. Some prefer cutting the eyes in December, and placing them in soil in pans in a cold frame until about February, before they are put into heat; others cut them and place them in heat at once, and that is the plan which I prefer. The beginning of February may therefore be taken as a good safe midseason for performing the operation. A few days earlier or later are, however, quite immaterial, much more being dependent on the after management of the plants.

There are many ways of putting in the eyes. They may be placed in shallow pans, *i.e.*, a number of eyes in each pan, in properly prepared soil, to be potted off after they have made some roots and have commenced to grow; or they may be (and this is perhaps the best plan of all) placed singly in small 60 pots, which should first have some charcoal or broken crocks put at the bottom, and then be filled up with a compost of one-half nice fresh turfy loam and one-half leaf-mould not too rotten, with a good proportion of sand. When the pot is filled, not over firmly, make a hole in the top of the soil sufficiently large to hold a walnut, which then fill with silver-sand, and placing the eye on this, press it down until the top of the bud is just level with the top of the soil. The pots or pans containing the

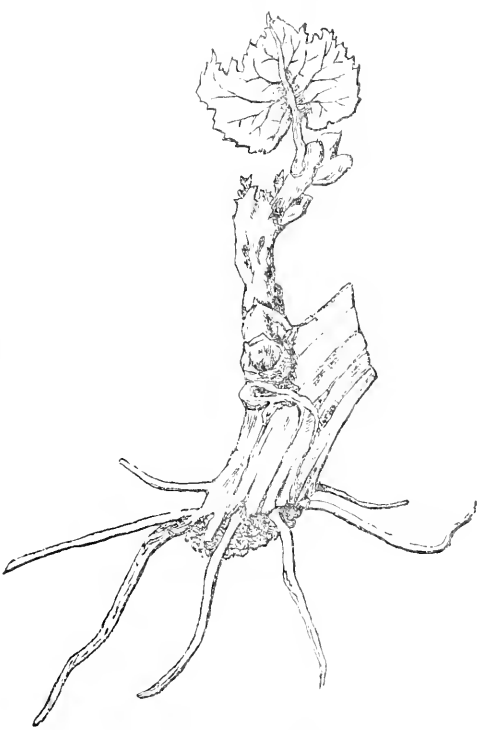


Fig. 3. VINE EYE STARTED.

eyes should then be plunged in a bed having a bottom-heat of about 80° and a top temperature of from 65° to 70°. Another good method, where a quantity of eyes have to be propagated, and where there is convenience for adopting it, is to prepare a small portion of the bed itself with suitable soil, and to place the eyes there at once, removing them and potting them off as they become fit. This is an economization of space in the propagating pit, which in the spring season is always much crowded. A most excellent plunging material is cocoa-nut refuse, over hot-water tanks, and the eyes themselves root most readily into this material when mixed with a little sand, only the roots formed do not make a sufficiency of fibres, so that they remove badly. The soil should be gently watered after putting in the eyes, and be just kept moist, but not at any time allowed to become soddened. When these eye-cuttings commence to form a callus, the buds will at the same time be bursting. Then is the only delicate and critical period, for every part is tender and easily destroyed. It is necessary at this period to be extremely careful as to the watering and the temperature. Once, however, get the top growing, and the roots to reach the side of the small pot, as in fig. 3, and they are comparatively safe, and this, if all circumstances have been favourable, should be in about a fortnight after putting in the eyes. About the time that the first leaf is fully developed, when they are about two inches high, they should be potted into five-inch pots, and from that time grown on rapidly.—A. F. BARRON, *Chiswick*.

EARLY VARIETIES OF FRUIT.

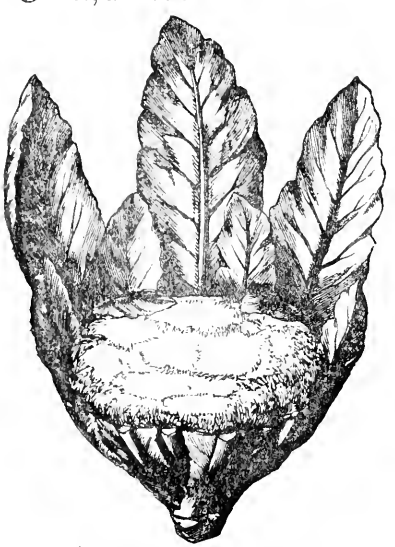
MR. THOMSON, in his article (p. 19) on the introduction of early varieties of fruit, has ventilated a very important question to all growers with houses where little artificial heat can be given. Having some experience in growing here, in a long glass-covered wall, a collection of the earliest varieties of Peaches and Nectarines, as well as hardy early grapes, I have thought that a list and description of them might be of use to growers forming a collection.

The early varieties of seedling Peaches and Nectarines raised by Mr. Rivers are a great boon to cultivators who have orchard houses or peach houses only slightly heated, or with no artificial heat at all. By growing these they can have a succession of ripe fruit from the middle of July until the mid-season varieties ripen, which may be kept up till the end of October with the latest sorts in favourable summers. With me, in the past summer, *Early Beatrice* ripened on July 18, followed by *Early Louise* and *Early Rivers*. *Early Silver* succeeded in the beginning of August; and *Hale's Early*, *Early York*, *Early Grosse Mignonne*, and *Malta*, made a good succession. My earliest Nectarines were *Fairchild's Early*, a very small old kind, but useful for its earliness; *Lord Napier*, one of Mr. Rivers' new early varieties; and *Hunt's Tawny*, a well-known old variety. All these ripened in August in the same house as the Peaches, and were succeeded in September by *Elruge*, *Albert Victor*, and *Pine-apple*. The only artificial heat they had was at flowering time, and that was only 8° above the external temperature.

In the same structure I have, planted in the border of the back wall, a collection of hardy early Grapes, and I am indebted to Arthur Trollope, Esq., of Eastgate, Lincoln, an enthusiastic grower of hardy grapes, for some of the varieties. The earliest variety in ripening was the *Early Malvasia*, or *Early Koischeim* of the Horticultural Society; it is a luscious, sweet, little white grape, and ripened, in the end of August, followed by the other early white sorts, *Early Malingre*, *Early Smyrna Frontignan*, *Chasselas Vibert*, *Early Saumur Frontignan*, and *Royal Muscadine* or *Chasselas de Fontainebleau* of the French. Of purple or black early grapes, the earliest in ripening was the *Chasselas Noir*, followed by the *Sarbelle Frontignan*, *Esperione*, and *Trentham Black*. All these varieties will do well in cool houses or for planting out on the open walls; and in some hot seasons will yield plenty of fruit, if protected from birds or insects when ripening. If nurserymen would make it one of their specialities to get a good stock of these early-ripening Peaches, Nectarines, and Grapes for sale, I am certain they would get plenty of customers amongst amateurs and gardeners with limited means of heating their forcing-houses.—WILLIAM TILLERY, *Welbeck*.

VEITCH'S AUTUMN GIANT CAULIFLOWER.

THIS fine Cauliflower was briefly noticed in your volume for 1871 as being a most valuable acquisition to the list of new vegetables. Since that time, no doubt, many have grown it and found it to be so; at least I have done so, and as seed-time is at hand, I am induced to add my quota towards making it more generally known.



AUTUMN GIANT CAULIFLOWER.

My attention was first called to it in the autumn of 1871, and I at once made up my mind to grow it in 1872, which I did, obtaining a sealed packet of the seed and sowing it about the middle of April in the open air with others of the Brassica tribe, securing it from the birds by covering it with netting. The result was that we cut fine white heads daily during the months of October, November, and December. The only fault, if that can be called a fault, is that in October the heads were too large to cook whole, but as the season advanced the heads became smaller. They were beautifully white and tender, as well as mild, when cooked. In November, as soon as there was an appearance of frost, the tops of the leaves were tied with bast matting to prevent the heads from being frozen. The friend with whom I first saw it, quite failed in growing his Giant Cauliflower in 1872, through taking too much

pains with it. He sowed his seed in pans, in heat, to get the plants forward, and the result was that they headed-in soon after midsummer, in a confused state. This shows that the proper season for its use is during the autumn months. It was just the reverse with my own. Some were planted in the open quarters in the garden, others on south and west borders, and there was only one plant which did not come true.—WILLIAM PLESTER, *Elsenham Hall Gardens.*

GARDEN GOSSIP.

THOUGH the year 1872 was not a propitious one for our Fruit crops, it has left us some NEW FRUITS. Amongst *Grapes*, which are the pride and glory of British gardens, Mr. W. Thomson's *Duke of Buccleuch* stands out pre-eminent as a white summer grape, having berries of the largest size, of a rich Hamburgh flavour, succeeding thoroughly under the same treatment as that variety, but ripening some weeks earlier. Mr. W. Paul's *Waltham Cross*, which we have figured, has as a late white grape no rival, except the Muscat of Alexandria. Mr. Pearson has several improvements on the Alicante and Black Morocco which promise well, but require to be more fully known. Among *Peaches*, Mr. Rivers' *Goshawk* and *Sea Eagle* deserve commendation, while among *Nectarines*, *Humboldt* is a large, splendid fruit of the Pine-apple character, and *Byron*, *Dante*, and *Lord Napier* are worth notice. Of *Apples*, *Peasgood's Nonesuch* is a very handsome fruit, with the style and appearance of Blenheim Orange; *Welford Park Nonesuch* is also a handsome sort, and is said to be a good dessert fruit; while *Empress Augusta*, *Red Hawthornden*, and *Yorkshire Beauty* are all excellent culinary Apples, and quite distinct. Of *Pears*, the Belgian *Joséphine de Binche* and *Beurré de Bisean*, though promising, have yet to be proved in this country; *Prince Imperial*, figured at p. 7, is a fine October fruit, as is Mr. Ingram's *Golden Queen*. In *Strawberries*, Mr. Laxton's *Traveller*, a hybrid between La Constante and Sir C. Napier, is a good new variety, partaking of the qualities of both its parents. Of *Gooseberries*, *Howson's Seedling* is a medium-sized red, of fine rich flavour. Finally, of *Melons*, Monro's *Little Heath* is a very commendable scarlet-fleshed variety.

—— NOVELTIES among *Vegetables* are every season forthcoming, the result either of cross-breeding or selection. This year *Peas* are in the ascendant, and to Mr. Laxton belongs the credit of introducing the earliest, *Harbinger*, a round blue sort; the latest, *Omega*, a dwarf Ne Plus Ultra, of excellent quality; and the largest-podded, *Superlative*, which is grand for exhibition purposes; also several others. Carter's *G. F. Wilson* is an improvement on Veitch's Perfection, *James's Prolific*, is a splendid white wrinkled Marrow, of fine appearance and quality. *Kidney Beans* have been represented by *Lee's Imperial Longpod* and *White Wax Runner*, both excellent sorts, the latter, the Haricot d'Alger of the French, having cream-coloured pods. Of *Onions*, the *New Queen*, which closely resembles the Nocera and the *Naseby Mammoth*, a selection of White Spanish, claim our attention. In *Turnips*, we have the *Cestrian Golden Gem*, a fine selection of the Orange Jelly; in *Lettuces*, the *Alexandra White Cos*; and in *Endive*, the *Round-leaved White Batavian*—all excellent sorts. Of new *Broccolis*, *Excelsior*, *Leamington*, and *Sutton's Perfection* are all good. Of *Tomatos*, *Hathaway's Excelsior*, a large round smooth American sort, is one of the best yet obtained. Of *Asparagus*, a large and excellent variety named *Connover's Colossal* is also an importation from America; the heads of this are larger and looser in the scales than the common sorts. Finally, in *Potatos*, the most important of all the vegetable tribe, the new claimants upon our notice are numerous, and many of them promising.

—— ABOUT 10,000 *Strawberries* are annually forced in pots at Sandringham, as we learn from Mr. Fish's description in the *Gardener's Chronicle*. The usual course with the earlier batches is to start them in pits plunged in warm leaves; they are then placed on shelves, anywhere and everywhere that room can be found for them, and gathered in quantity from the middle of February till they come in out-of-doors. The following varieties are grown—from 2,000 to 3,000 of those first mentioned, coming down to a few hundreds of some of the last mentioned:—President, Keens' Seedling, Sir Joseph Paxton, Premier, Dr. Hogg, Coxcomb (better than the Doctor), La Constante, Eclipse, and British Queen. The plants are laid early in 60 or 48-sized pots, potted into 5-inch pots as soon as

rooted, and arranged fully exposed to the sun on a large space reserved for this purpose. A few of the earliest are laid on their sides in the autumn, to hasten the maturation of the crowns, but the bulk are plunged up to the rims in a ribbon border for the winter, where they stand exposed to all weathers until drafted into the pits. The result has been very satisfactory, and Mr. Carmichael attributes much of his success to the small pots, and to the fact that he uses no saucers, as well as to the roots getting ahead of the crowns in the start of growth.

—— In the *Shakspearean Imperishable Labels* recently introduced by Messrs. Bell and Thorpe we seem to be supplied with what has long been a desideratum in our gardens, namely, a tolerably cheap, and at the same time permanent label for naming garden plants, whether of the utilitarian or ornamental class. Wooden labels are cheap and readily accessible, and serve all the purposes of a temporary label for small stock plants; but in the case of permanent plants, whether border flowers, fruit trees, or ornamental trees, as well as the more permanent of indoor plants, they are both costly and perishable. Cast-iron labels of various kinds have been introduced, but they break too readily, and are expensive. Messrs. Bell and Thorpe's labels are formed of a tough, white, lustrous metal, which does not break like cast iron, and which entirely withstands the action of the weather; while the names being raised in the casting, they cannot possibly become illegible, even if the black face with which they are originally prepared should wear off. Some are stalked for setting into the ground; some provided with eyes for nailing up or suspending, and some are provided with hooks to clasp the rim of a flower-pot. The prices range from 9d. to 18s. per doz.

—— The *Dendrobium chrysotis* of Reichenbach, figured in the Florist and Pomologist for 1871, is identified by Dr. Hooker with the previously published *D. Hookerianum* of Lindley, specimens of which were gathered by Dr. Hooker in 1848. The plant is quite distinct from any of the forms of D. *fimbriatum*, with which it has been compared, and is certainly one of the finest of the yellow-flowered Dendrobes.

—— M. Fr. Ptaff, experimenting on the amount of *Evaporation that takes place from the Surface of Leaves*, having examined several times daily, from May till the end of October, a small Oak, the number of leaves on which were estimated at 620,464, finds that the evaporation varies from day to day according to circumstances, but the average for the whole of June was 26,023 kilogrammes; and for October, 17,023 kilogrammes (1 kilogramme = 2 lb. 3 oz.).

—— The higher *Municipal Honours* occasionally fall to the lot of horticulturists. Thus we learn that Alderman Mackey, the well-known seedsman of Westmoreland Street, Dublin, has been elected for the second time to the distinguished office of Lord Mayor of the Irish metropolis; while Mr. Henry Steward, an enthusiastic amateur horticulturist, who has for several years past been a leading exhibitor of Pelargoniums, Tulips, Auriculas, Carnations, Picotees, &c., and is at the present time an active member of the committee of the York Gala, is the present Lord Mayor of York.

—— It is stated that *Waterproof Translucent Paper for Screens*, &c., may be formed by washing paper (or cotton fabrics) with a solution of gelatine or glue, to which one-fiftieth part by weight of the bichromate of potash is added; they are thus rendered impermeable to water. The process, which depends on the action of bichromate of potash on the gelatine, must be carried out in full daylight. It is stated that the Japanese prepare their paper umbrellas in this way.

Obituary.

—— Mr. James Donald, Superintendent of the Royal Gardens, Hampton Court, died on December 23, 1872. He was born at Forfar in 1815, and when eighteen years old was apprenticed at Lilly Bank Nursery, Dundee, whence he went as under gardener to Kinnordy, the seat of the late Sir Charles Lyell, who procured his admission to Chiswick in 1839; he remained there as a student three years, and then went to Chatsworth. When Mr. Fortune went to China he came back to Chiswick as temporary superintendent of the hothouse department; afterwards he became head gardener to the late

Sir W. Lawrence, Ealing Park; and subsequently entered the service of the late Sir R. Peel, Drayton Manor, and of J. G. Barclay, Esq., of Leyton. In 1856 he was appointed superintendent of the Royal Gardens, Hampton Court, which post he held till his death.

GARDEN WORK FOR FEBRUARY.

FLOWERS.

ONE of the most cheerful signs of the times (horticultural) is the growing taste for *Spring Flowers*—Daisies, Violets, Primroses, Hepaticas, Forget-me-nots, &c.; for every year the roll of spring beauty is lengthening, the demand for it strengthening. Search well amongst these plants for slugs, which seem to have a special liking for sweetness and beauty; they may be found feeding by night, and should be either picked up or dosed into abstinence, as already prescribed. Should frost set in, look out for a sparrow raid on *Crocus* flowers, and prevent it by suspending, a foot or so above the expanding flowers, a well nigh invisible line of thread; the slenderness of the thread is an element in its effectiveness. *Tulips* and *Hyacinths* may be slightly protected during severe weather by a surfacing of cocoa-nut refuse, tan, or moss, or by sticking in a few boughs amongst them. Prepare the soil for planting *Gladioli;* they do best in a deep sandy loam, well enriched with thoroughly decomposed manure. *Ranunculuses* delight in old cow-dung, a rather damp situation, and a firm soil; plant from 4 in. to 6 in. deep, and cover the crowns with a light sandy soil. *Anemones*, *Irises*, *Lilies of the Valley*, or the *Oxalis Bowiei*, the latter on a warm spot, may also be planted. The hardier *Roses* may still be planted; but the Tea-scented ones are better deferred till the end of April; finish pruning hardy sorts, but defer weak and tender ones for another month or six weeks. Keep beds and borders sweet and clean by frequent stirrings. Finish all digging and manuring, and see that all dead stems, leaves, and litter are removed. All ground-work, laying of turf, walk drainage, &c., should speedily be completed, and the turf swept and rolled, preparatory to mowing, should the weather prove open. The chief secret of forming a velvety lawn is early and continuous cutting.

IN-DOOR PLANTS, such as *Camellias*, *Azaleas*, *Epacrises*, *Heaths*, *Primroses*, *Cinerarias*, bulbs, forced shrubs, &c., will now be in beauty. Maintain a temperature of 45°; even *Camellias* don't enjoy less when in flower, and few other plants. Avoid fumigating the show house or conservatory, for this not only robs even *Violets*, *Sweet Brier*, or *Lilac*, of their fragrance, but it often spots the flowers also; such plants as *Cinerarias*, *Calceolarias*, &c., should be fumigated in a pit or shed before entering there. *Pelargoniums*—Show, Fancy, and French—must be shifted as they require it; stop for late blooming, and train; water with great care after shifting, using tepid water, for the softer and more active the roots, the greater the danger of a chill from cold water. Shift early *Fuchsias* as soon as the young shoots have made an inch of wood; these young shoots heeled off strike like willows. *Heaths*, &c., in full growth, require liberal watering; remove every dead leaf and flower from the plants, as well as all moss, &c., from the surface of the pots, and see that scrupulous cleanliness and perfect order reign throughout every department; the latter constitute more than half the charm of every good flower garden and plant house. *Stove Plants* and *Orchids* should all be thoroughly cleansed while dormant; with the exception of pure spirits of wine as sold by chemists, I have not found anything that was certain death to mealy-bug. *Stove plants* must now have an increase of heat and water. It is safe practice to fumigate powerfully before any new leaves are formed. Three times smoking in succession will generally do for the

thrips; one dose, however strong, is seldom sufficient, the second makes them very sick, a third while they are in this state kills them. *Ferns* and *Lycopodiums* should be fresh potted just as they are about to start into growth.

Auriculas, *Pinks*, *Carnations*, &c., in frames, must have all the air possible in suitable weather, to prevent damp and drawing; place *Dahlias* in heat when a large stock is needed, also *Salvia patens*, and stock plants of *Verbena*, *Alternanthera*, *Iresine*, *Coleus*, &c.—*Pelargoniums* also if much increase is wanted, but I prefer autumn-struck cuttings of these for the main supply. *Shrubby Calceolarias* in cold pits may be beheaded for cuttings. Prepare a pot or frame, or clear a house, for seed-sowing. Subtropical seeds must now be got in, for it is wise to turn out such things as *Castor Oil Plants*, *Wigandias*, *Solanums*, &c., large and late, lest the end of May, or even June, proves chilly. Increase plants of which the stock is likely to be short, as fast as possible; soft, quickly-grown branchlets strike the fastest. From 60° to 70° is the temperature for the rapid rooting of 'flower-garden stuff,' as it is called; pot off as soon as rooted, and establish the newly-made plants in a similar temperature.—D. T. Fish, *Hardwicke*.

FRUITS.

In-Doors.—*Pine Apples:* Proceed gradually as the days lengthen to increase the temperature to plants in all stages; any sudden change or excitement now, after the long continuance of dull, hazy weather, may throw many of the succession plants prematurely into fruit. Plants that are swelling their fruit should have liberal supplies of water, and a moist atmosphere. Those now "showing" fruit will require care and attention; maintain a bottom-heat of about 85°, and keep the atmosphere rather dry whilst they are in flower. The plants intended for fruiting next autumn and winter should now be shifted into their fruiting-pots, and should be put in the place of those from which the fruit has been cut during the winter. If the young successions have a bottom-heat of about 80°, and are growing satisfactorily, do not be in too great a hurry to shift them.—*Vines:* If the berries are all thinned, and the shoots properly tied down in the early house, the principal matters now requiring attention will be to keep up a proper temperature, and nice genial atmosphere, attending carefully to the ventilation, and watering the inside borders when necessary. Attend to the thinning of the berries, and the stopping and tying-down of the shoots as they require it, in the succession houses, and see that there is a nice warmth in the outside borders. Disbud the shoots in vines that are breaking; and prune and dress all late vineries.—*Peaches* and *Nectarines:* Thin the fruit, where set, in the early house, leaving more than sufficient for a crop until after stoning, and syringe the trees two or three times daily; attend to the timely disbudding of the shoots; keep a moist atmosphere and give air freely when the weather permits; a night temperature of 55° to 60° will be quite high enough until after the "stoning" is over; keep inside borders well watered; whilst the trees in the succession house are in bloom, give as much air as the state of the weather will allow; start late houses, beginning with a low temperature.—*Figs:* These are very subject to red-spider, which it is difficult to keep under, unless the trees are syringed two or three times daily: keep them well watered and maintain a night temperature of about 60°; stop the young shoots when about 6 in. long.—*Cherries:* Admit air freely when the weather permits; after the fruit is set, syringe the trees gently once or twice a day; a night temperature of 50° will be sufficient until after stoning.—*Strawberries:* Introduce a fresh batch of plants once a fortnight; give abundance of air to plants in flower, and as soon as they are set thin the fruit, and increase the heat.—*Melons:* Sow a few seeds for an early crop; keep them near the glass, and give them a nice bottom-heat.

OUT-DOORS.—The planting of *Fruit trees*, where it has yet to be done, should be proceeded with when the state of the soil and weather permits. Advantage should also be taken of fine weather to push on the *Pruning* of all kinds of fruit trees. Old standard trees that have been neglected should be severely operated on; thin well the branches on trees that are crowded. Keep the centres of all trees open to admit the sun and air. Prune *Gooseberries* and *Currants*, and fork over borders. Tie up *Raspberry* canes, and give the plants a good dressing of rotten dung.—M. SAUL, *Stourton*.

VEGETABLES.

WITH every hope that the advent of February may bring us fine drying weather, during which backward work may be pushed forward successfully, I recommend all blank spaces to be immediately trenched or dug over, in preparation for the approaching sowing time. In the case of light soils the sooner this operation is performed the better, because their texture being too loose already, they will assume by natural gravitation and the moderate amount of cohesion of which they are possessed, a mechanical condition far more suitable for the roots, and more to their liking, than when a looser condition exists. With the first weeks in February some few vegetable seeds—*Cabbage*, *Savoy*, *Radish*, and a succession of *Peas*, *Beans*, and *Parsley*—should be sown upon the driest and most sunny position to be found—that is, if mild sunnyweather continues.

About the last week of the month transplant autumn-sown *Onions* along drills previously prepared with the hoe about one foot apart; dibble the young plants out about 8 in. apart in the rows, taking care not to bury the base of the plants too deeply, and placing the roots as straight down and as deep as they will go. Transplant *Cabbages* by way of succession to such as were autumn-planted. Earth-up late *Celery* for a succession to former batches. Sow *Cauliflower* in a box, or upon a hot-bed for summer use; Veitch's Autumn Giant is an excellent variety. A small sowing of *Beet* should also be made, at the earliest time possible, where a demand for this vegetable exists. Earth-up *Peas* and *Broad Beans* needing it, rather by anticipation than allowing them to grow on so as to be liable to injury by wind-waving. Plant a few Early Ash-leaf *Potatos* upon a south border, placing the sets moderately deep. Transplant *Horse-Radish*, or make fresh beds by cutting off the crowns of such as exist, dibbling them in about fourteen inches deep, and filling up the holes with fine cinder-ashes, through which the young growth when it starts may more readily reach the top. Sow a little *Turnip* seed about the close of the month; I have found the Red American a good sort for sowing upon a south border, as it comes in early and shows as little sign of 'bolting' as any; sown thus it affords a very early supply of a very desirable vegetable. *Herbs* may be increased by division of the roots; which is applicable to *Marjoram*, *Fennel*, and in some instances to *Thyme*, *Mint*, &c. Herb plantations should also be neatly pointed over and mulched with thoroughly decomposed manure, where not so done in the autumn.

Proceed with the formation of *Cucumber* and *Melon* beds, taking care to add nothing to the previously fermented stable-litter, or sweet and clean old leaves, otherwise rank steam will form, to the too certain injury of the youthful and tender plants; these must have all the light and air possible afforded them, without unduly decreasing the mean temperature around them, which should average 60° by night and from 65° to 75° by day, according to the influence of the sun. Sow in this frame a little *Celery* seed in a box. Dwarf *French Beans* should also be sown for a succession where the means exist. Place *Mint* and *Tarragon* into some of the heated structures for an early supply.—WILLIAM EARLEY, *Valentines*.

PICOTEES.
1. Mrs Hornby. 2. Mrs Fordham

NEW VARIETIES OF PICOTEE.

WITH AN ILLUSTRATION.

FOR the opportunity of figuring the two novelties represented in our plate, we are indebted to Mr. Turner, of Slough, by whom they were raised, and by whom splendid examples were exhibited last season, which secured for them the highest awards. Our illustration by no means flatters them, as the blooms when sketched were rather past their best, but it gives a fair notion of their character and general excellence.

Fig. 1 represents MRS. HORNBY, a light-edged red variety, of large size, and the finest in its class; it is a charming flower, on account of its purity and even marking, as well as for its finely-shaped smooth petals, which, for the reason already mentioned, are not so well shown in the drawing as they might have been. Fig. 2 represents MRS. FORDHAM, a large and well-marked flower of the medium-edged bright rose type, also a grand and effective flower for general cultivation, and the finest in its particular style, the flowers being large and full without confusion. The admirers of this delicately-beautiful and fragrant flower will find both these varieties to be grand acquisitions to their collections.—T. M.

GARDEN LILIES.—CHAPTER II.

WE resume the consideration of the *Archelirion* group at the point where we were compelled to break off at p. 16, after describing *L. tigrinum* and its varieties.

2. LILIUM SPECIOSUM (*Bot. Reg.* t. 2000).—This very beautiful Lily, which is often erroneously called *L. lancifolium* in gardens, is distinguished from *L. tigrinum* by the absence of bulbils in the leaf-axils; and from *L. auratum* by its broader lanceolate leaves and its more completely reflexed flowers. It grows from 1½ ft. to 3 ft. high, or more, with smooth green erect stems, which are furnished with bright green shortly-stalked leaves, 6 in. to 9 in. long, of an ovate or ovate-lanceolate form, glossy on the upper surface, and showing from 7 to 9 ribs or veins beneath; the upper leaves assuming a more lanceolate figure. The flowers, which are usually three to six, sometimes more numerous, form a broad open raceme, attached by stalks which are erecto-patent, the lowest four to five inches long; they are from six to eight inches across, of a beautiful deep rose-colour, with a well-defined white margin, the lower half being studded with papillæ of a rich ruby-red colour, and having a glabrous hollow running down the keel towards the base, the perianth segments being broader than in *L. tigrinum*, more approaching to ovate, and not drawn out at the point. The pollen is of a deep red hue. We have only seen this typical form in quantity at the Knap Hill Nursery.

This Lily, which was introduced in 1832 from Japan, flowers in this country towards the end of July, or in August or September, and is well known and much prized in gardens as an ornamental plant, being very extensively grown for

conservatory decoration, though equally hardy with its ally, *L. auratum*. Of the numerous varieties in cultivation, the most distinct are noted below.

L. SPECIOSUM ROSEUM (*Paxton's Mag.* v. 1).—The above description applies to what is regarded as the type of the species—a richly-coloured flower with bluntish sepals, distinctly bordered with white, and superbly spotted. Other green-stemmed forms, doubtless raised from seed, and therefore varying among themselves, but with longer perianth segments, of a pleasing blush or rosy hue, and nicely spotted, bear the name of *roseum*. This, too, is a very beautiful form, but not equal to the type, which is comparatively rare.

L. SPECIOSUM RUBRUM.—This variety resembles *roseum* in the character of its flowers, the chief difference between them being that the stems are purplish-brown instead of green. In many cases they are probably not distinguished from each other, but are grown indifferently as representing the high-coloured type.

L. SPECIOSUM PUNCTATUM (*Paxton's Mag.* v. 267).—This variety, which bears the Japanese name of *Tametomo*, and has also been called *Broussartii*, *albiflorum*, and *lancifolium roseum* in gardens, is distinguished by having green stems, and white flowers dotted with rose-coloured spots. It is probably often grown indifferently with the following.

L. SPECIOSUM ALBUM.—In this variety the flowers are white and but slightly spotted, much like those of *punctatum*, from which it differs mainly in having the stems of a purplish-brown colour.

L. SPECIOSUM VESTALE.—This Lily, which is probably a garden variety, has green stems, and pure white unspotted flowers.

Besides the foregoing, which are fairly distinct types of varieties, but which on account of propagation by seeds may not exactly represent every form to be met with in gardens, there is a race, sometimes called *fasciatum*, sometimes *corymbiflorum*, in which the stems are fasciated near the top, a condition which results in a more crowded inflorescence than that of plants of normal development. It is, however, a constant peculiarity, and occurs both among the red-flowered and white-flowered series, the former being the *L. speciosum fasciatum rubrum*, the latter the *L. speciosum fasciatum album* of gardens.

Attempts have been made to cross this fine Lily with *L. auratum*, but apparently with little result. A variety, however, the aspect of which is affirmative of this origin, which has been attributed to it, was exhibited in 1870, by Mr. G. Thomson, of Stansted Park, under the name of *Purity;* the flowers in this case were of large size, white dotted with carmine, the perianth segments being spread out more than in the type forms. The foliage resembled that of *L. auratum*, between which, and the deep red form of *L. speciosum*, it was said to have been raised.

3. LILIUM AURATUM (*Bot. Mag.* t. 5338; *Florist*, 1862, 129).—To the introduction of this magnificent Lily may no doubt be attributed, in great measure, the revival of a public taste for these flowers. Its nearest affinity is with *L. speciosum*, from which, however, it differs in its narrower foliage, and

larger, more spreading, and less compactly reflexed perianth segments. As usually met with the plant is from 2 ft. to 3 ft high, but it sometimes reaches double or treble this height, or even more, with proportionate vigour. The stems are erect, smooth, and of a purplish-green colour. The leaves are numerous, scattered, linear-lanceolate, shortly-stalked, from six to nine inches long, glossy on the upper surface, and marked beneath with 5 (rarely 7) distinct translucent ribs or veins. The flowers form an open raceme terminating the stems, from three to six or eight-flowered in plants of moderate vigour, from twenty to thirty-flowered in stronger plants, and occasionally bearing on a single stem upwards of a hundred flowers,* the flower-stalks being erecto-patent, and three to four inches long. The flowers when expanded are ten to twelve inches across, the segments spreading, recurved towards the tips, ovate or ovate-lanceolate, and five to seven inches long; they are ivory-white, studded with numerous deep purple oblong spots, marked

LILIUM AURATUM—the detached flower one-sixth natural size.

with a broad central yellow band, and copiously papillose towards the base. The anthers are large and conspicuous with bright red pollen.

This grand Lily is a native of Japan, and was introduced to this country by the Messrs. Veitch and Sons, of Chelsea, who exhibited it for the first time in flower in July, 1862. Mr. Kramer states that it is found in the Japanese woods; and Mr. Oldham, who calls it the *Udi* of the Japanese, records it as chiefly occurring in light rich soil, among the shrubs and between the rocks near Yokohama. Of late years it has been annually imported to this country by tens of thousands, the plants varying to the extent which might be expected amongst natural seedlings. One or two distinct varieties have been retained. The accompanying woodcut represents a small plant on a very small scale, and a detached flower about one-sixth the natural size.

L. AURATUM RUBRO-VITTATUM (*Rev. Hort.* 1867, 371).—This variety, obtained

* Messrs. Standish and Co., of Ascot, grew in 1869 a fasciated stem 13 ft. high, bearing over 100 blossoms. Another 9 ft. high, also fasciated, and bearing 103 flowers, was grown by Mr. Jones, of Didsbury.

amongst imported bulbs, and figured in the work here quoted as *L. auratum rubrum*, differs from the type in having the broad band of yellow which runs down the centre of each segment, exchanged for one of a deep dull or brownish-red, more or less merging into yellow towards the base. Numerous gradations of this have been observed, and some of the most marked have been exhibited and rewarded as distinct forms; such are the *splendidum* of Messrs. Cutbush, of Highgate; the *Charles Turner*, of Mr. Turner of Slough; and the *rubrum* above referred to, and which was cultivated by M. Vilmorin. In a bed of some 5,000 bulbs of this lily, partly seedlings, which we have watched, during the past two seasons, at the Knap Hill Nursery, a considerable number, fully five per cent., were of this red-banded form, the colour of the band varying much in intensity.

L. AURATUM VIRGINALE.—This is a well-marked variety, and was also obtained amongst the bulbs imported from Japan. It is remarkable for having the flowers pure white, that is to say, without the golden band, and with the purple spots exchanged for yellow ones, which are not at all conspicuous. The absence of the band gives it a very distinct appearance. A similar form has been cultivated under the name of *Alexandræ*, by Mr. Cripps, of Tunbridge Wells.

Besides these, numerous variations of a lesser degree occur amongst the imported bulbs received from Japan. Thus, occasionally, semidouble flowers appear; again, the spotting instead of being purple is sometimes crimson, or instead of being thickly it is sometimes sparsely distributed, or instead of being oblong or punctiform it is more or less linear. The yellow band, moreover, varies in breadth and intensity of colour; and even the form of the flower and breadth of the segments offer considerable diversity in different plants, these differences being, no doubt, owing to the plants being of seedling origin.

The plant is found to be perfectly hardy in congenial soil, and flowers grandly in the open air from well-established bulbs. We have seen plants with at least 30 flowers on a stem not over 3 ft. high; and the late Mr. Neilson, of Falkirk, has recorded one growing in his garden, which, after being three years in the ground undisturbed, bore, in 1870, a stem 7½ ft. high, 3¾ in. in circumference at a foot from the ground, and which supported 70 blooms, forming a cone 2½ ft. deep and 4½ ft. round, resembling a colossal Hyacinth. Some remarkable specimens have also been produced under pot-culture; suffice it here to mention two: that grown at Quarry Bank, near Liverpool, from a single bulb obtained in 1865, and which, in August, 1871, growing then in a 24-in. pot, had numerous stems 9 ft. high, was 8½ ft. wide, and bore 225 expanded flowers averaging 10 in. in diameter, of which a woodcut appears in the *Gardeners' Chronicle*, 1873, 215; and that grown at Melchet Court, and exhibited in 1869, which had also been grown on from a single bulb, and had at that time eleven flowering-stems, each about 8 ft. high, and bore in the aggregate 152 flowers, of which 130 were then fully expanded. —T. MOORE.

AQUATICS.—Chapter IX.

ONE of the neatest of our hardy Aquatics is the common Limnanth, *Villarsia* or *Limnanthemum nymphæoides*, which is occasionally met with in our English ponds, though it is not very common. I saw it, at no distant date, in fine condition in one of the ponds on Clapham Common, but it is now fast disappearing from that locality.

The leaves, which lie flat on the water, are deeply cordate at the base, about 3 in. long by 2 in. across, and in some respects resemble those of the smaller Nymphæas; but the margins are more wavy, and the surface is thickly splashed over with irregular, dark chocolate spots, especially when in a young state. They are produced in clusters, from which runners are formed after the manner of the Frog-Bit, and these soon form separate plants. The flowers are of a bright yellow colour, nearly rotate, consisting of five petals, about one inch across, and somewhat fringed; they stand well up above the surface, and are in perfection in July and August, but flowers are produced more or less freely through most of the summer months.

This plant is admirably adapted for planting where the space is limited. Any one may grow it who can command one foot of water; or it does equally well for the margins of ponds, even to the depth of three feet. Moreover, being a British plant, no questions need be asked as to its endurance.

The only other hardy species are the white-flowered *V. lacunosa*, of New Jersey, and the *V. cordata*, of North America, with yellow flowers, neither of which is at present in cultivation in this country. The tender species of *Villarsia* will be treated of in a future chapter.—W. Buckley, *Tooting*.

HOW SHALL WE PROTECT OUR BUSH FRUITS?

THIS is a question often asked, now that the Small Birds are become so numerous,—thanks to our Liberal Government for protecting what we call our enemies, by putting a tax on the gun, as well as by passing the Small Birds' Preservation Act. When in the North of Scotland in August, 1871, I was very much gratified to see the way in which gooseberries and currants were managed in the different gardens I visited. Small bushes about 3 ft. high, and as much through, were as thickly laden with fruit as with leaves. I inquired how the crop of fruit was kept from the blackbirds. The answer was, "We shoot all the birds in the winter, except a few which we leave for a song." This, no doubt, was true, for it struck me at the time that where there was one small bird to be seen in the North, there seemed at least 20 in the South. In England it commonly happens that several acres surrounding the kitchen garden—in which are planted trees from which the gardener is expected to supply the house with fruit—are planted with shrubs, just as if they were put there for the purpose of breeding birds to eat the fruit, and, what is not less important, the buds.

The means of protection adopted are various. Here, for instance, the goose-

berries differ so much in habit that we are obliged to protect the buds in different ways. Thus the upright growers are tied up in bundles with hay or straw bands, while those of a pendulous habit are covered in all round each bush with laurel branches stuck in the ground, and tied at the top with hay-bands. The Currant bushes are tied up in the same way as the Gooseberries where it can be done, but those on the north walls are well covered over with white worsted. This, I find, the birds do not like to get entangled in, and it can remain on without being any harm to the trees; but the bushes that are tied up must be untied, and the laurels taken away as soon as the buds begin to burst in the spring.

The north walls are by far the best places for currant-growing, being more easily protected by netting, besides which the fruit will keep there at least two months after it is ripe, provided the birds, wasps, &c., are kept from it. I wish we had the same means of protecting the gooseberries when in fruit. Netting them is almost useless, at least it is so here, as the blackbirds will sit on the nets, or creep underneath, until the bush is cleared of its fruit. I hope some of your contributors will give us the result of their experience on this subject; for although the gooseberry and currant are but common fruits when compared with the grape, pine, peach, &c., they are too valuable to be dispensed with.—WILLIAM PLESTER, *Elsenham Hall Gardens.*

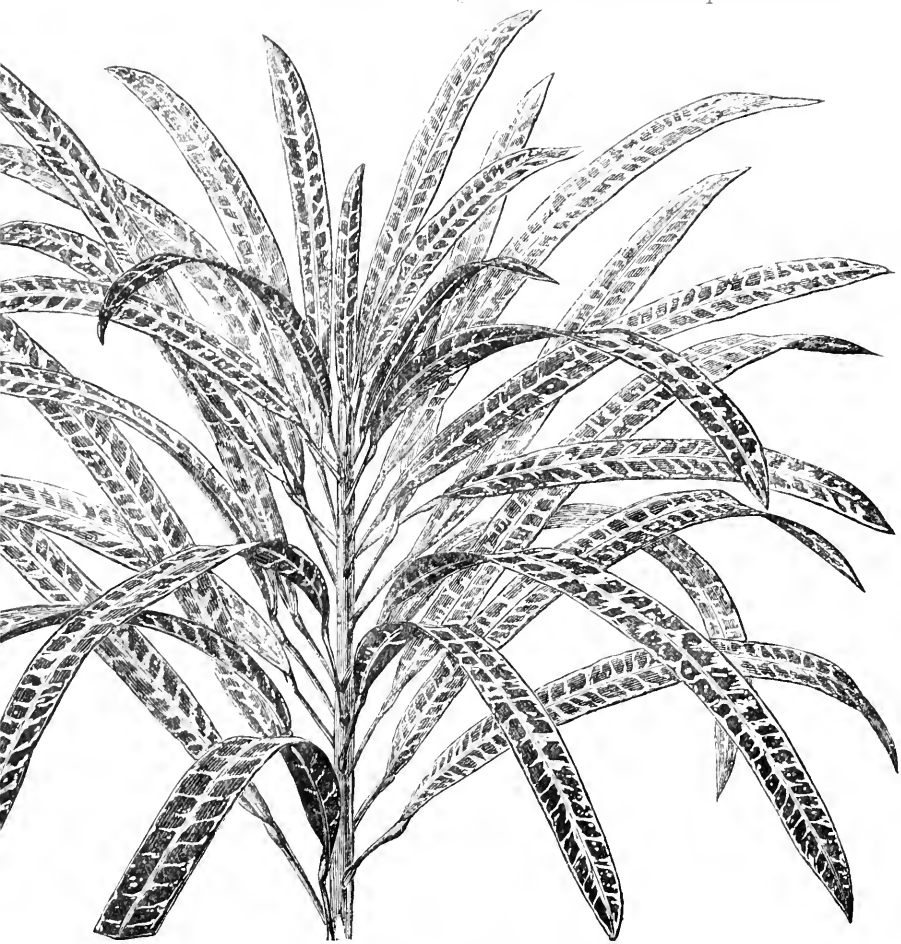
VITIS POLYMORPHA.

PERMIT me to call attention to this Vine as a climbing plant, which I consider superior to *Ampelopsis Veitchii* for the furnishing of walls, &c. It is less luxuriant than that plant, but still of a free habit, and it clings firmly to whatever object it may attach itself to. The foliage is of medium size, in form more elliptical than otherwise, and the colour by the beginning of September is something between vermilion and light red. This plant is, I suspect, by no means common, as I have never met with it elsewhere, nor does it appear to be known when pointed out to visitors. It reached us through a private source, which may account for its scarcity.—ALEXANDER CRAMB, *Tortworth.*

CODIÆUM (CROTON) WEISMANNI.

CERTAINLY we have here one of the finest of the multifarious forms of the *Croton variegatum* which have been introduced within the last few years from the islands of the Pacific. It is indeed a glorious acquisition, being of very graceful habit, and of free growth. The leaves, as will be seen from our illustration, kindly furnished by Messrs. Veitch and Sons, are long and narrow—technically, linear-oblong—attaining a length of from ten inches to twelve inches, and a width of about three-quarters of an inch, terminating in an acute point. The upper surface is of a dark shining green, with golden blotches, the midrib and margins rich golden yellow. The under-surface is of a paler green, but similarly marked. It is a plant of remarkable beauty, and is, no

doubt, one of the best because one of the most constant of the many Crotons now within reach of the cultivator. It gained in 1868 the first prize as the best



CODIEUM (CROTON) WEISMANNI.

new foliage plant exhibited, and will be a welcome addition to the most select collections of plants of ornamental foliage. The constancy and brilliancy of its markings will always make it a favourite.—T. MOORE.

WINTER-FLOWERING EUPATORIUMS.

THE most serviceable of the species are *E. gracile odoratum* and *E. riparium*, both greenhouse shrubs of compact habit, with fresh evergreen foliage, and producing white Ageratum-like flowers in the greatest profusion during the autumn and winter months. They are most acceptable and invaluable additions to our winter-flowering plants, commending themselves by

their freedom of culture and adaptation to decorative purposes, either as cut flowers, or for conservatory embellishment.

The former of these plants, as the name implies, is deliciously scented, and consequently valuable for bouquets: it is, moreover, the first to flower in autumn. After flowering, the plants should be freely cut back early in the season, and encouraged to break in a gentle heat. As soon as the latent buds have pushed, they should be repotted, shaking the soil from the roots, freely pruning them back, and planting them in pots commensurate with their reduced state. A suitable soil may be composed of two parts turfy loam to one of peat and leaf-mould, adding sand and fine charcoal to maintain porosity. Plunged in a mild bottom-heat near to the glass, and attended with careful watering, these will quickly become established, and grow vigorously.

It is desirable to stop and regulate the shoots in the earlier stages of growth, so as to ensure well-furnished, compact growth. Plants of considerable size may be produced, if stimulated by frequent shifts and richer soil, as the roots attain strength. But it is important with the earliest set, intended to flower in autumn, to give but one shift, and to encourage early maturation, by gradually exposing them to a free circulation of air in a cool house during the summer. By such treatment they will be induced to flower early without forcing. I find that this variety expands and retains its blooms in the greatest perfection in a temperature of from 45° to 50°. Nice fresh plants for succession may be grown from cuttings the first season, and for decorative purposes, being in small pots, these are the most acceptable.

The *E. riparium* very fitly succeeds *E. gracile odoratum*, as to time of flowering, and is much hardier, of a fine habit, and exceedingly effective, with such a prolific tendency to bloom, that even plants in small pots are profusely covered with its snowy clusters of flower-heads.

These remarkably neat and serviceable plants cannot be too strongly recommended, blossoming as they do at a time when flowers are so much in demand, and not over plentiful.—GEO. WESTLAND, *Witley Court.*

RIVERS' LARGE MONTHLY RASPBERRY.

I DO not think the merits of *Rivers' Large Monthly Raspberry* as an autumn fruit is by any means sufficiently appreciated, for it is but seldom that one meets with it in gardens, where it might be expected to be looked upon as a most useful and indispensable adjunct to the dessert, being as it were, a continuation of the summer fruit far into the autumn.

I have tried other kinds of autumn Raspberries, but none have proved of such sterling quality as Rivers', which never fails, whatever the season, in rewarding me with an abundant crop from the middle of September until late in November, when it is usually finished for the season by a frost sharper than usual. I have even gathered good fruit from the undersides when the tops have been covered with ice. It is also quite as valuable for the kitchen, so that none of the fruit

need be wasted; all the over-ripe ones and those slightly damaged by birds or otherwise are useful for tarts, producing smiles from the cook, when she expected that the small summer fruits were over for the season.

This Raspberry thrives well in a strong rich loamy soil, well manured in the winter, and requires no coddling as to situation. Under these circumstances the roots revel at their will, and the canes have the whole summer in which to prepare for their crop. As this kind bears fruit on the shoots of the current season, the plants must be cut down close to the ground in February, when, if needful, they may be divided for increase, or the old stools may be reduced and replanted. They will amply repay for the labour bestowed upon them.—J. W. Laurence, *Farnham Castle.*

NOTABLE NEW PLANTS AND FLOWERS.

[F.C.C. = First-class Certificate; S.C.C. = Second-class Certificate.]

Agave Corderoyi [F.C.C.].—One of many recent fine additions to these handsome greenhouse succulents. This has stiff narrow leaves about an inch wide, and a foot long, with small, distinct, marginal spines, and a strong terminal one of a dark brown colour.—*Mr. J. T. Peacock: R.H.S., Dec.* 4.

Aphelandra nitens [F.C.C.].—The flowers of this showy stove plant are of a bright vermilion hue, and the dark shining leaves are deeply tinged with claret on the under sides; it flowers very freely while small.—*Messrs. Veitch & Sons: R.H.S., Dec.* 4.

Beet: Clark's Variegated [F.C.C.].—Altogether unique in character, being handsomely variegated with rose-red and creamy white, with dashes of orange. This strain originated in 1867 among some ordinary Garden Beet, growing in the open ground, and through the succeeding generations from seed has maintained the variegated character. It is likely to prove a valuable decorative agent for greenhouse and conservatory work during winter, and probably also for the open air in summer.—*Mr. J. Clark: R.H.S., Jan.* 15.

Chrysanthemum (Japanese) Elaine [F.C.C.].—A magnificent variety, the flowers in their build showing a near approach to some of the finest incurved sorts of the large-flowered type; colour white, the reverse of the petals tinted with carmine; florets broad; the blooms large and of full substance. This fine variety was distributed by Mr. Forsyth, Stoke Newington, in the spring of 1872.—*Mr. R. Rowe: R.H.S., Nov.* 6.

Chrysanthemum Hero of Stoke Newington.—A deep lilac-tinted incurved flower, white towards the centre; it is of good substance, and very promising.—*Mr. A. Forsyth: R.H.S., Dec.* 4.

Chrysanthemum Mrs. Forsyth.—A pure white seedling variety from the old peach-coloured Christine; and while retaining the freedom of bloom that makes that old flower so popular, has blossoms of a much fuller substance, and almost globular form.—*Mr. A. Forsyth: R.H.S., Dec.* 4.

Cœliopsis hyacinthosma [S.C.C.].—This somewhat singular plant was introduced from Panama, and has the habit of throwing up short stalks from the pseudobulbs, on which are produced clusters of waxy-white hyacinth-scented flowers.—*Mr. Wilson Saunders: R.H.S., Dec.* 4.

Croton majesticum [F.C.C.].—A handsome variety, of free growth, with brilliantly coloured leaves, an inch wide and a foot long, of a linear-lanceolate

form, marked with blotches of red, the margins golden, the midrib golden, flushed with red. One of the best of the South Sea Island introductions.—*Mr. Bull: R.H.S., Dec.* 4.

CROTON SPIRALE [F.C.C.].—A very distinct and handsome variety, from the South Sea Islands. It has long narrow leaves, not unlike those of *C. angustifolium*, but they are curiously twisted in a spiral manner, and of diverse colours, ranging from deep bronzy-black through several shades of olive-green and red to creamy-yellow.—*Mr. Bull: R.H.S., Dec.* 4.

CYCLAMEN (PERSICUM) GIGANTEUM SUPERBUM [F.C.C.].—A variety of great size and substance, the flowers white, delicately tinted with purple, with dark violet-purple mouth, stout, and of fine shape.—*Mr. R. Clark: R.H.S., Jan.* 15.

CYCLAMEN (PERSICUM) WHITE PERFECTION [F.C.C.].—Without exception the finest white variety yet raised, the colour very pure, quite snow-white, the florets broad and stout, and the flowers of fine shape.—*Mr. H. Little: R.H.S., Feb.* 13.

ENCEPHALARTUS VILLOSUS AMPLIATUS [F.C.C.].—A very robust-growing form, having long bold arched leaves of a lively green hue, and forming a really handsome object for warm conservatory decoration; the pinnæ are but slightly toothed.—*Mr. Bull: R.H.S., Feb.* 12.

GYMNOGRAMMA DECOMPOSITA [F.C.C.].—A very elegant Fern, with handsome decompound spreading fronds; it is related to *G. Pearcei*, but is powdered with sulphur-yellow instead of white. The finely-cut segments give it a very elegant character.—*Messrs. Veitch & Sons: R.H.S., Jan.* 15.

LÆLIA AUTUMNALIS GRANDIFLORA [F.C.C.].—A very finely-coloured variety of this beautiful orchid, bearing large flowers deeply tinted with rosy-purple.—*Lord Londesborough: R.H.S., Feb.* 12.

ODONTOGLOSSUM HALLII [F.C.C.].—A very fine form of a very fine species, the large and bold pale-yellow flowers being heavily spotted with brown, and forming a massive spike.—*Messrs. Veitch & Sons: R.H.S., Jan.* 15.

PHAIUS BERNAYSII [F.C.C.].—With the habit of *P. grandifolius*, this has pale primrose-coloured flowers, with an edging of white; the flowers are indeed almost pure white when they first open. The flowers are borne in spikes on stout erect stalks, and though scarcely so showy as those of *P. Wallichii*, yet afford a very acceptable variation.—*Messrs. Veitch & Sons: R.H.S., Jan.* 15.

PILOCEREUS DAUTWITZII [F.C.C.].—A very remarkable succulent, related to the Old Man Cactus. The plant shown was about 5 in. or 6 in. in height, ribbed, and provided with white woolly hairs, which were wrapt completely round it. It is a rare species, similar to, if not identical with, a plant called *P. Williamsii*.—*Mr. F. A. Haage, Jun.: R.H.S., Jan.* 15.

POINSETTIA PULCHERRIMA MAJOR [F.C.C.].—This brilliant variety has a larger number of bracts than the old form, and they are broader and flatter, and of a glowing cerise-scarlet colour; when seen side by side, the difference of hue is striking.—*Messrs. Veitch & Sons: R.H.S., Dec.* 9.

PRIMULA SINENSIS (FIMBRIATA FL.-PL.) CAREYI [F.C.C.].—The flowers, which are large and full, have a ground-colour of mottled lavender and pink, each segment being slightly edged with white; novel and distinct.—*Mr. T. Carey: R.H.S., Jan.* 15.

STENORHYNCHUS SPECIOSUS ORTGIESII [F.C.C.]—This belongs to an interesting group of stove orchids, and bears spikes of flowers of a lively rose-colour, the leaves being boldly spotted with white.—*Mr. Wilson Saunders: R.H.S., Jan.* 15.

THUJA OCCIDENTALIS LUTEA [F.C.C.]—A most valuable acquisition, received

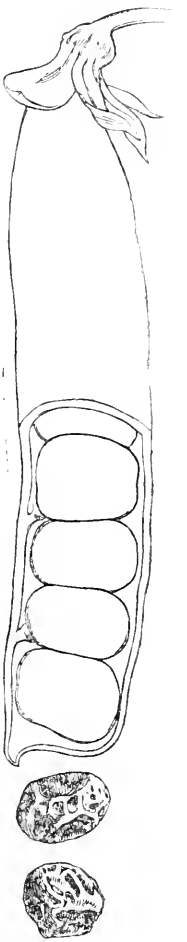
from America under the name of "Golden Arborvitæ, George Peabody." It has a dwarf robust habit, the branches being altogether suffused with a deep golden hue, and it is said to withstand alike the scorching heat of summer and the severest cold of winter. It is one of the most decidedly golden-tinted shrubs yet obtained. —*Messrs. G. Jackman & Son: R.H.S., Feb.* 12.

VANDA CATHCARTII [F.C.C.]—A rare and distinct epiphyte, bearing large pendent flowers, the exterior of the segments being of a creamy-white, and the interior marked with transverse reddish bars on a pale yellow ground.—*Messrs. Veitch & Sons: R.H.S., Jan.* 15.

VARIATIONS OF PEAS.

FROM their enormous number, the varieties of Peas are now becoming quite perplexing. By careful selection for a great number of years, a pure, good, and distinct variety may be secured; it is distributed, and in a few years' time, as the result of different modes of cultivation and of saving the seed, this same variety assumes various phases of character, which appear perfectly distinct. Advantage is taken of such variations to rechristen them, and so they are returned upon us with new names and new characters—later or earlier, taller or dwarfer—and the true original stock is entirely lost sight of, excepting some one more careful and more conscientious than the rest takes care to preserve it.

As an example of this, let us take the *Ne Plus Ultra* Pea, a variety which has been for more than twenty years before the public, and which is at the present day perhaps unsurpassed. Numerous are the aliases that this superb Pea has enjoyed. Not a season passes that it does not appear in one or two new dresses. There are at the present time three distinct varieties of this Pea. The annexed figure shows what may be styled the normal type, which may be thus described:—Plant of strong and robust growth, from 6 ft. to 7 ft. high, having dark-green blotched foliage. Pods produced in pairs, from 12 to 18 on a plant; of a dark green colour, changing to a lighter shade as they become fit for use, and of a deep vivid green colour inside; they contain from 7 to 8 very large peas of a dull green colour. The ripe seed is wrinkled, and in colour mixed white and olive. Sown at the same time as Sangster's No. 1, this variety comes into use about fourteen days later. A few of the more prominent synonyms belonging to it are *Jeyes' Conqueror, Payne's Conqueror, Cullingford's Magnum Bonum, Champion of the World.*



NE PLUS ULTRA.

The variety named *General Wyndham*, although often confused with Ne Plus Ultra, from which it has no doubt been raised, is, however, entirely distinct. It

is a much larger Pea in every respect, and comes into use when sown at the same time some 8 or 10 days later. It has the same handsome green appearance, and the same excellent quality. *Boyes' Masterpiece* is the nearest approach to this excellent variety at present before the public.

There is yet another form having much smaller pods and peas, and also later than the normal type in coming into use. This is often sold as the true Ne Plus Ultra, whilst that is doing duty under a new name. This small-podded later variety appeared last season under the names of *Edwards' Invincible*, *Raper's Champion of the World*, and *Late Wrinkled Green*.—A. F. B.

YOUNG'S NEW WEEPING BIRCH.

WITH AN ILLUSTRATION.

WE have seldom met with a more remarkable and characteristic hardy deciduous tree than that now represented, nor one more worthy of being planted in any situation where an ornamental tree could be appropriately introduced. To the airy lightness and graceful elegance of the Birch in its normal character, this New Weeping Birch, called *Betula alba pendula Youngii*, adds the grotesque peculiarity which characterises the growth of the Weeping Beech, since its main branches often start up at random in an erratic sort of way. Thus the tree acquires a peculiar and distinct aspect, in which gracefulness is singularly combined with a certain weird-like picturesqueness.

We learn that this ornamental variety of Birch was found growing in a wood in Hampshire, about twenty-five years ago, by the late Mr. W. Young, of the Milford Nursery, where, thanks to the courtesy of the present proprietor, Mr. Maurice Young, the photograph was taken from which our plate has been prepared. Owing to the extreme slenderness of the branches, which in the original plant were so weak as to creep along the surface, great difficulty was experienced in propagating the first plants. Our plate represents one of these about 23 years old, and of the following dimensions:—Height of stem, 10 ft. 6 in.; height of head, 8 ft.; total height, 18 ft. 6 in.; diameter of head, 12 ft. Some of the long pendent twigs are 9 ft. in length, and not thicker than fine string.

As a weeping tree of a distinct type, this Birch cannot be too highly recommended. We saw it in all stages, during the past summer, growing in Mr. Young's Nursery, and we were greatly impressed with the peculiar and somewhat erratic style of beauty which it presented—for no two trees were alike in habit. Our illustration represents its average or medium habit of growth. When in its younger stages it not unfrequently presents the rotund outline observable in the lower portion of our figure, but as it gains age away starts a leading shoot, which 'groweth where and how it listeth,' sometimes taking on the form here represented, sometimes running up more slender and fountain-like, and sometimes stretching out laterally, as if determinedly opposed to symmetry, and defiant of control. The spray is remarkable for its long slender thread-like character, falling sheer down in tufts, many feet in length, from the main branches which

betula alba pendula Youngii

give it support, and when gently swayed by the summer breeze these leafy streamers have a peculiar lightness which no other similar tree possesses. Those who value picturesque and characteristic trees would do well to secure some of the few good-sized specimens which are yet procurable.—T. Moore.

THE GLOBE AMARANTHUS.

In these days, when Church decoration has become so much in vogue, and when the so-called sub-tropical garden is thirsting after features of novelty, one wonders that the Globe Amaranth *(Gomphrena globosa)*, a most valuable old plant, is not more extensively grown. There is much to recommend it to the favour of cultivators, not only for the sake of the flowers when dried for decorative purposes, but as a beautiful pot plant, in which form it is most effective when plunged out into small beds during the summer months. For this latter purpose it should be well hardened off, and not put out before the month of July. This plant being annual, can only be propagated by seeds, which should be sown in well-drained pots, about the end of March, and plunged into bottom-heat. The seeds should be well cleaned from their chaffy covering, and if placed in a little tepid water for a few hours previous to sowing this will greatly facilitate their germinating. If fine specimens are required, sow singly in thumb-pots, and shift into larger pots as the plants progress; but if a display of bloom only is required, place three plants into a 32-size pot, when sufficiently large to handle, and shade them for a few days that they may not be checked in growth.

When required for drying, the flowers should be gathered before they are too far advanced. They should be dried in the shade, and will then retain their beauty for years, especially if they are not exposed to the air.—Edward Bennett, *Hatfield Park, Herts.*

SALVIA SPLENDENS.

Do we not, in the search after novelty, forget some of our best old friends? I have known *Salvia splendens* from boyhood, having been presented with a cutting soon after I mounted the first step of the horticultural ladder; it was then considered rare, having been introduced from Mexico about six years previously. I believe it was for a long time treated as a stove plant, but I had then only a warm greenhouse, and I managed to preserve my plant through the winter, and was delighted to find that by giving it successive shifts through the summer, and the best places, it became a splendid plant, and flowered magnificently in the autumn, creating quite a sensation in our little world, and obtaining for me more praise than I deserved—because, after all, it was only a blundering hit, for I found afterwards that my trouble had been thrown away, and that the plants would make the summer growth just as well in the open air, without any attention whatever, until the first week in September, when they should be taken up and potted, kept close, shaded for a few days, and then placed in the open air again until frost comes. After this, they must be placed in the lightest part of

the greenhouse, and a rich harvest of brilliant scarlet flowers will for many weeks reward the grower. These, moreover, are invaluable for cutting, as they do not emit the powerful scent which most other *Salvias* do; and if the centre spike is cut, the laterals come very strong. From plants so treated I had last season a splendid bank along the back of the conservatory, with many hundred spikes of bloom, and which furnished a constant supply for cutting.—JOHN COX, *Redleaf*.

ON THE CULTURE OF THE GLADIOLUS.

THE past season has been one of the most ungenial I ever remember, and in consequence of the failures in collections of this beautiful autumn flower many persons declare their intention to give up its cultivation. Of course we cannot class such as these amongst ardent or enthusiastic florists or amateurs, though I fully admit that such a season is not very encouraging to new beginners. I know that in many instances very serious losses have been incurred, both amongst these and amongst tulips, but for myself, I have every reason to be satisfied with the healthy state of my stock.

I have tried many experiments with Gladioli, but cannot understand how or why so many of the high-priced ones refuse to grow, when our own roots under the same treatment, particularly seedlings, of which I raise a few every year, seldom fail. Mr. Tillery recommends the raising of seedlings, and I, too, would advise all who can to try their hand at it. I have had some splendid spikes of seedlings during the past season, and as a good portion of them bloom the second year if well grown, there is not so much patience required as in raising Tulips, Crocuses, or Hyacinths, which have to be grown from four to six years before they make any return for the care and labour bestowed on them.

Experience teaches me that the beds require to be deeply dug, say from 16 in. to 18 in., and a change of soil should be made every season, in order to keep the bulbs healthy. I am not an advocate for over-strong soil for them, nor for heavy manuring. I use a good share of well-decomposed vegetable refuse, and in some seasons crushed bones mixed with it, also about an equal portion of old manure, and a fair quantity of wood ashes, obtained by burning the trimmings of hedges, pruning of trees, &c., which are husbanded for the purpose; and I find a little sharp sand, put both under and over the bulbs at planting time, of good service. I have for several seasons tried the system of potting the bulbs without deriving any benefit from it. I have also tried planting in January, February, and March in the open ground, but prefer the latter, and consider from the 10th to the 20th to be the best time for general purposes. If a few late blooms are required, the bulbs may be left out until the middle of April.

Seed may be sown in nicely prepared soil in the open ground early in April, taking care to water the young plants with liquid manure if continuous dry weather occurs, and even occasionally if the weather is not dry. The plants in the blooming beds also are much benefited by liquid manure once or twice a week, or by being top-dressed with manure and watered. Those who are at the

trouble to raise them from spawn—and I advise only the best to be saved—may sow it in drills 3 in. apart and 2 in. deep, about the 20th or latter end of February if the weather permit, and it must be protected, if severe weather occurs, until the plants make their appearance.

The taking up and storing of the bulbs is a matter of paramount importance, and should not be defered until the stems die down. The beds should be looked over frequently, and as any of the plants show signs of ripening, they should be taken up at once, the tops being reduced, and the corms placed in a cool, airy place to dry. When thoroughly dried, they may be cleaned and put away in bags, packed in hampers or baskets, if the quantity require it, and be placed in a moderately dry room out of the reach of frost, for in severe weather the frost will destroy them, even inside a cottage, if placed next to an outer wall. I have known whole stocks lost in this locality from this neglect when I have not lost a single root. I cultivate about 3,000, and therefore, of course, take some special interest in them, and should not like to hear of their cultivation being discontinued. I feel certain that losses in a great measure arise from want of a little more care in their treatment.—JOHN WALKER, *Winton, Manchester.*

CALANTHE VEITCHII.

FOR real usefulness, I think it must be acknowledged that this is the best of Mr. Dominy's hybrid productions amongst orchids; for on account of its beauty, and from the facility with which the stock may be increased and the plant grown, it is calculated to make its way into general cultivation as an indispensable addition to our winter-flowering stove plants—not merely because it is an orchid, but I may say in spite of it, for the mere fact of a plant being an orchid seems sufficient to deter many from attempting its growth, although numerous species, really valuable and moderate in price, will succeed even better in other situations than in the orchid-house proper.

Our present subject, in common with its parents, *Limatodes rosea* and *Calanthe vestita*, with the varieties of the latter, thrives well if potted in loam and old cow-dung, with a moderate proportion of silver sand. A close pit is all that it requires in the way of house-room; and as the whole growth is made in the summer months, it needs nothing more than slight shade during bright sunshine, moderate supplies of air, and plenty of tepid water while in full growth, to be gradually reduced as the pseudobulbs attain maturity. As soon as the flower-spikes appear the plants may be removed to the stove, where they will reward us with their lovely rose-coloured flowers, which form the most pleasing contrast with other foliage. After flowering they must be kept dry and at rest until the buds at the base of the bulb begin to move.

Now for propagation. Most of the pseudobulbs of this class have a peculiar constriction about the middle, giving the appearance of one bulb above another. This neck is very brittle, and a year or two ago I accidentally snapped the top of

one off, but instead of throwing it away, I put it in as a cutting by the side of the pot, and much to my surprise it threw up young growth from the base, which growth by the end of the season was nearly equal to that from the uninjured bulbs. Following up this hint, I now systematically break off the tops of all, and without further preparation they are planted as cuttings in a mixture of loam, leaf-mould, and sand. This I do at the beginning of March, at the time of repotting the old plants, afterwards giving both plants and cuttings the same treatment. Thus the stock can be nearly doubled annually, and by the simplest means one of the finest winter-blooming plants can be made amenable to ordinary means and treatment.—J. W. LAURENCE, *Farnham Castle, Surrey.*

WHY HAS THE AURICULA DECLINED IN POPULAR FAVOUR?

THE Auricula, once the most popular flower in cultivation, seems at this time to be one of the most neglected. There are doubtless reasons for this falling-off. Within my recollection Lancashire and Yorkshire alone could boast of having scores of growers and exhibitors of the Auricula, along with the Polyanthus—which seems also to have almost disappeared. From about 1830 up to 1850 I could count upon from 50 to 60 cultivators of the Auricula and Polyanthus in the West Riding of Yorkshire alone; and in the East of Lancashire I could reckon upon quite as large a number. At the present time I don't suppose that more than a dozen growers could be found, and none of these have the plants in stock as we used to see them then. The chief reason for this decline is, I believe, that with the exception of some two or three individuals, all the florists of the old school have gone hence, and they have not indoctrinated others to take their places; and strange to say, the plants must have died off with their owners, for there are but very few to be found in those quarters where they were once so plentiful. It may be somewhat different in other parts of the country, but I scarcely think it is so. In the Midlands there is scarcely a grower to be found, and if we go further south, to London and its environs, where there used 40 years ago to be a dozen growers and exhibitors, we find that there is scarcely one now.

If we turn to the North it is different. In Scotland the florist spirit seems more retentive of life, and I believe the Auricula is at present the first favourite amongst popular flowers, standing high, both as regards its culture and in respect to the art of seedling-raising. Within the last few years, two or three Scottish florists with whom I am acquainted, have obtained some good seedlings, which in time will take their place among the best old standard varieties—which is much needed. From the pains necessary to be taken, the raising of seedling Auriculas is a slow and tedious process, so that those who engage in it must have the matter thoroughly at heart, and unless proper and diligent care be taken in procuring the seed, in ninety-nine cases out of every hundred, the time and labour will have been thrown away. Indeed, whatever choice flower we may

take up to improve by careful fertilisation and selection, really good novelties are very slow in appearing. I have raised thousands of seedlings, and know others who have done the same; and while some of us, during a lifetime, may happen to have obtained one or two good things worth keeping, others have never been lucky enough to get a single variety of any prominent merit. This seems disheartening, and so it has been in the case of some who having tried for a few years, gave up in despair: however, had these persons made but another sowing they might have been successful, and have had their names registered among those who stand in the first rank as seedling-raisers. This should at least stimulate to perseverance. When we come to examine, we find that we have nearly as many names of men who have raised choice sorts of Auricula as we have of good named flowers; from which we gather that no one has ever been fortunate enough to raise any number of really choice sorts.

For all this, I do not see why the Auricula should have got into such disfavour. True enough, different individuals have different tastes and ideas; but, as one among the rest, my notion is, that of all the flowers in cultivation there is none to surpass or even to equal this in beauty. I may, on a future occasion, have a few more words to say by way of encouragement to young florists to try their hand at the cultivation of the Auricula—my first favourite, now of over fifty years' standing, and likely enough to be my last.—J. Hepworth, *Huddersfield.*

HOW TO GROW DRACÆNAS.

THESE most useful of all foliage plants—which, thanks to our enterprising nurserymen, have been much improved of late—should find a place in every stove; for while they are second to none for table decoration, they are, when well coloured, and raised above the other plants, amongst the best of all plants for making the conservatory gay with their painted foliage. They are also found to be very useful in the subtropical garden, but should be well hardened before being placed there, or they will lose most of their leaves. The *Dracænas* are very easy to propagate, as any portion of the stem or main root, cut to about an inch in length, and put into light sandy soil, will, with the aid of bottom-heat, strike root freely; but to obtain well-feathered and richly-coloured plants, I prefer the tops taken off early in the spring, and potted singly into 60-size pots in light sandy soil. These must be placed in a temperature of 75° with a gentle bottom-heat. As soon as the roots find their way to the sides of the pot, they should be shifted into 48-size, using equal parts of good fibry loam and peat, with sufficient silver-sand to make the compost sufficiently porous to let water pass freely through. Pot moderately firm, and place them in a stove where they can obtain the benefit of the sun's rays, which will not only brighten their colour, but harden the foliage, so that it will stand much longer than that of plants grown in the shade. By the end of June they should have another shift, using the same kind of compost as before. Care must be taken that the

soil never becomes too dry, as that is sure to prove fatal to the bottom leaves. When the plants have filled the pots with roots, they will be greatly benefited by the use of weak manure-water twice a week. If the plants are intended for the table, they should have a few pieces of the common *Selaginella* placed on the soil, which will soon cover the pot, and form a nice contrast with the bright foliage of the *Dracæna*.*—T. HEARN, *Somerley Gardens*.

EARLY VARIETIES OF FRUITS.

THE subject broached by Mr. Thomson in the FLORIST (p. 19) is of so much importance, that one wonders that the early varieties of Peaches have not found a more general distribution in the northern parts of the kingdom. But some of the older varieties, such as *Acton Scot* and *Early York*, begin to ripen at Studley towards the end of August; the *Malta* early in September; succeeded by *Early Admirable*, *Violette Hâtive*, *Royal George*, &c.—the latter sort, however, rarely giving us fruit presentable at table, as it becomes more or less mildewed every year. Then *Late Admirable* and *Walburton Admirable*, in favourable seasons, continue our supply through October: the last year indeed they were good to the beginning of November, and then the *Solway* gave us fruit for tarts to the second week in November. Only once in eleven years—in 1866—have Peaches failed to ripen well here, and that year we gathered several dozen.

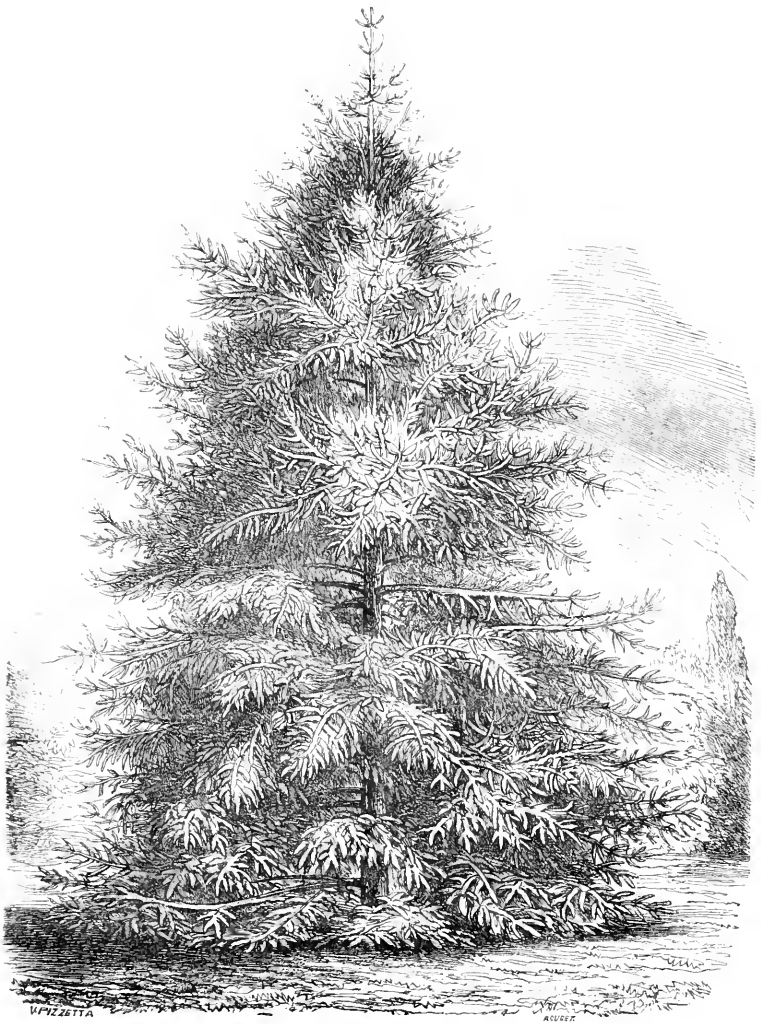
Of the American Peaches, *Golden Rath-ripe* ripens on the walls about the end of August, and is a fine-looking Peach; it is the only one I grow on the wall, having discarded several. The new early Peaches of Mr. Rivers' introduction I only grow under glass, and therefore cannot speak of their suitability for outdoor culture. Our late houses supply us with *Royal George*, *Bellegarde*, and that splendid Peach, *Princess of Wales*, till the early part of September. The best Nectarine on the walls at Studley is the *Pitmaston Orange; Pine-apple*, a seedling from it, is much finer under glass, but I have not tried it out of doors. I may say that two or three very keen amateurs in this neighbourhood grow all the new varieties under glass, and I anticipate they will soon make their way into our larger gardens. *Early Rivers*, *Early Silver*, *Early Alfred*, *Dr. Hogg*, are all good early varieties; and then we have the *Early Ascot* from Mr. Standish, and *Hale's Early* from America. We expect Mr. Thomson will supply us with a first-class Early White Grape as a companion to the Black Hamburgh, than which we scarcely expect a better black Grape.—JOHN CLARK, *Studley Royal*.

PICEA PINSAPO.

ONE great merit of this Silver Fir as an ornamental tree consists in its faultless symmetry of growth; while among other qualities of no small importance may be named its perfect hardiness, as well as its indifference as to soil so long as it is moderately light, though it doubtless prefers one which is deep. As a specimen tree for lawns and pleasure-grounds few of the firs

* Plants thus treated, Mr. Chilman informs us, were about the best he has ever seen.

are more pleasing: while as an avenue tree and for timber, it has strong claims on the attention of planters. Its fine green colour, and the thickly-set leaves standing out at right angles, and giving the twigs a bottle-brushlike appearance, add much to its beauty. Mr. Fowler, of Castle Kennedy, who has, during



PICEA PINSAPO.

the past year, communicated a series of very valuable practical papers on Conifers to the *Gardeners' Chronicle*, remarks of this tree, that "at first the leading shoots grow slowly, the energies of the plant being principally expended on the lateral branches. At this period the roots are also very active, spreading out and extending in all directions, and doubtless preparing to support the

rapid upward extension of the plant, to which for a time its energies are now principally directed. As it increases in size, the regularity of the fine symmetrical form which it generally assumes in its young state is broken; the result is one of the finest gems we possess as a really ornamental tree."—T. MOORE.

GARDEN LITERATURE.

IN Mr. D. Thomson's book on FRUIT CULTURE UNDER GLASS*, those who are interested in this branch of horticulture, will find trustworthy instructions for the culture of all our more important tender fruit crops, including pines, grapes, peaches, nectarines, figs, melons, strawberries, and cucumbers. The object of the work is to supply a deficiency in our garden literature. Before it appeared, there was no book of moderate size in which the forcing and general culture of these fruits collectively, was discussed. No one was more competent than the author to supply this deficiency; and in adding that he has produced a book extremely convenient as to size and arrangement, and no less clear as to its directions, and sound as to the advice it offers, we intend no matter-of-course compliment. The instructions given will enable amateur cultivators to gain an insight into the practical details of culture necessary to arrive at success; and they will be even more useful to young gardeners who are really desirous of mastering their profession, since they may here find materials to lay a broad and solid foundation upon which to heap up the results of their own patient and persevering observations. Considerable space is devoted to calendarial directions, indicating the principal monthly attentions required in the case of each of the fruits above named. It is a standard book of its class.—T. M.

GARDEN GOSSIP.

THE parasitical *Loranthus europæus*, a European relation of our common Mistleto, has been established on the Oak in the Glasnevin Botanic Garden. Dr. Moore, to whom the credit of this horticultural feat is due, after repeated trials and failures when the seeds were placed in contact with the old bark and the alburnous wood, at last adopted with success the following *modus operandi*:—The soft bud of a young shoot of the previous year was gently bruised and the seed of the parasite inserted in the centre of the partially bruised bud. Two seeds thus planted grew, one on the Common Oak, the other on the Turkey Oak. This occurred in January and February of 1870, and though the progress of the plants has been slow, about a dozen leaves were formed last year by each of the plants. The success of the experiment is therefore assured.

—— ANOTHER Chinese Cucumber, named *Toong Qua*, and supposed to be a form of *Benincasa cerifera*, has been introduced to our gardens by Mr. Temple, from Foo Chow, where it is largely used as an article of food.

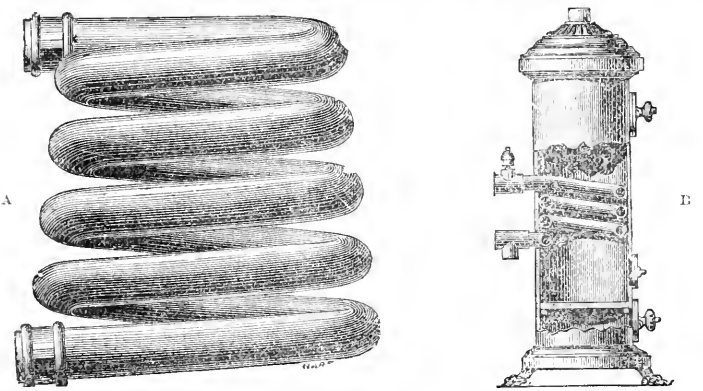
—— AN example of the handsome winter-blooming *Clematis indivisa lobata* was exhibited recently by Messrs. Standish and Co., and attracted much attention. The specimen was trained to an oval wire frame, and was thickly covered with clusters of largish creamy-white flowers with coloured centres. It appeared likely to make a

* *Handy-Book of Fruit Culture under Glass.* By David Thomson. Edinburgh and London: William Blackwood & Sons.

good plant for early exhibitions. Mr. Standish strongly recommends it as a cool greenhouse flowering plant, and says it will stand as much as 25° of frost without getting harmed. We have no doubt the sight of this interesting example will do something towards stimulating plant growers to undertake its culture. It comes from New Zealand.

—— One of the most useful plants that can be grown in pots all the year round for cutting for bouquets, is the white *Jasminum grandiflorum*. At Chiswick Mr. Barron is seldom without a few plants of it in flower, which object is attained by keeping several batches of it in various stages of growth. The plants are all worked on a common stock, and as soon as they have done flowering they are cut back, rested for a short time, and then when young shoots begin to push they are shaken out and repotted in 32-sized pots. The successional batches are treated in the same way.

—— One of the simplest, and apparently one of the most economical of *Hot-Water Boilers*, is that called *Deards' Patent Centrifugal Heating Apparatus*, of which a wood-cut is annexed. It will be seen that the boiler consists of a continuous coil of pipe completely surrounding the fire. This arrangement, by which the water, which has become cooled while traversing the pipes, is speedily reheated, and leaves the upper coil at a high temperature, secures a rapid circulation throughout the apparatus, this prompt and free distribution of heat being effected by a comparatively small consumption of fuel, which



A, Boiler for heating large houses; B, Stove for warming small houses.

is brought to bear so directly upon the boiler-surface during its combustion. The larger sizes are set in brickwork in the ordinary way; but Mr. Deards has also adapted the principle to a slow-combustion stove, and has in this way provided one of the best and readiest modes we have seen for heating the small conservatories and greenhouses of amateurs. With this small slow-combustion stove, consuming, it is said, one bushel of coke or cinders, and keeping heat in 100 or 150 feet of hot-water pipe, all damp cold and frost are entirely prevented, at the small cost of 4d. per day, the stove burning from 8 to 12 hours without attention. We presume this estimate was made before the present days of high-priced fuel, but in any case the apparatus is evidently most economical.

—— In the new *Platyloma brachypterum* we have a neat and entirely novel greenhouse Fern, related in some respects to Platyloma mucronatum (Pellæa mucronata, *Eaton*), but differing in its linear fronds and much narrower pinnules. The erect position of the rigid pinnæ, with the spreading direction of their pinnules, giving the narrow erect blue-green fronds a bristling appearance, are very peculiar features, while the short stalkless pinnæ, almost forming a semicircle in outline, furnish another striking characteristic. The decumbent caudex appears to creep amongst rocks and stones, and is thickly furnished with the hard enduring fronds, those at the apex emerging from a conspicuous tuft of very narrow scales. The pinnæ are nearly uniform throughout, the large ones not exceeding an inch in length, and about $1\frac{1}{4}$ in. in breadth. It is nearly allied to P. bellum, but is larger in its parts, with fewer pinnules. The Messrs. Veitch and Sons, of Chelsea, have recently imported both these plants in a living state from California.

GARDEN WORK FOR MARCH.

FLOWERS.

SHOULD the weather be suitable, *Hardy Annuals* may be sown, either where they are to flower, or in a sheltered place or reserve garden. The old herbaceous border never looks more in character, seldom more beautiful, than when brightened up by the gleam of hardy annuals. If the weather is severe, these may be sown in a cold frame or Rendle's Protector, the latter an admirable contrivance for the raising of seeds. Overgrown shoots of *Herbaceous plants* may still be reduced; it is a good plan to take up the stool bodily, divide it, and plant on a fresh spot; *Phloxes*, *Golden-rods*, and such plants soon drain the soil dry of virtue, but by giving the plants a new place we set them down to a new larder without the trouble of filling it with manure. Most herbaceous plants, however, pay well for manuring. Top-dress and prune *Roses*, if not already done; the richer the dressing now, the larger and more brilliar the Roses in June. Guard *Crocuses*, *Tulips*, and other bulbs against mice, birds rabbits, &c. Hares, I find, are very fond of crocus leaves, feeding them off like sheep. Choice bulbs of *Hyacinths, Ranunculuses, Anemones*, *Tulips*, &c., require some protection from biting March frosts. Stir the soil among all spring flowers and bulbs; remove dead or dying flowers; give the last finishing touches to the turf, and sweep and roll it ready for mowing; relay *Box*, *Thrift*, or other edgings; turn or re-surface gravel walks, or hoe, rake, and roll them; and let perfect order and cleanliness wait on beauty throughout the entire garden. Those who would have their lawns of the finest velvety pile throughout the season must see to it that they are level as a die and clean as a fair lady's hand now, and also that the knives of the mowing machine anticipate rather than wait upon or lag behind growth.

IN-DOORS.—Cleanliness is the parent of health inside, as it is the true sister of beauty in the garden; it is positive cruelty to plants to force them to run along the lines of growth with a load of dirt on their backs, or of insects sucking out their life. The dirt may be fine, the insect almost invisible, but so much the worse for the plants. In regard to insects, our hearts must be as flint, and 'utter swift destruction' must be our motto. There are those who still believe that ants eat scale or aphides, but it is all delusion. Most stove plants will now need either potting or top-dressing. *Alocasias*, *Anthuriums*, and *Caladiums* do best in shallow pans; *Crotons*, *Palms, Ferns*, &c., need deep, roomy pots; *Dipladenias, Clerodendrons*, and *Allamandas*, though gross-rooting, flower best when under-potted; the latter should now be stopped to make them break back freely. *Dipladenias*, *Stephanotis*, *Clerodendrons*, &c., should be trained near the glass till they show flower; they can then be trellised on any form or size a fortnight or three weeks before they are wanted for show or other purposes. Fresh pot *Begonias*, reducing the balls. *Gesneras, Tydeas,* &c., that have flowered in winter should be gradually dried off; encourage *Gloxinias* with manure water; cut down *Euphorbia jacquiniæflora*, *Poinsettias*, *Begonias*, *Justicias*, *Plumbago rosea*, &c., and put in cuttings. Remove shy-flowering plants of *Eucharis amazonica* into a cold pit for three weeks; then return them to the stove and plunge in a bottom-heat of 80°, and the flowers will come forth with a rush. Keep the stove at 70° to 75° fire-heat, 80° to 85° sun-heat, with plenty of moisture, and shade during fierce gleaming sunshine. Be cautious of fire-heat in the conservatory and greenhouse on frosty nights, and drag the fires clean out on bright mornings. Nothing is more trying to plants or more destructive to flowers than the meeting together of sun and fire-heat. Keep down the temperature to 50°-55°, and by giving air without creating

draughts. Partially shade *Camellias*, *Azaleas*, forced *Lilacs*, and other shrubs from the sun; the flowers will last so much longer and look fresher. *Heaths* can hardly be kept too cool. *Cinerarias* and *Calceolarias* should be shifted into larger pots for late bloom. *Pelargoniums* must be stopped, trained, and staked; a temperature of 50° to 55° is most suitable for these plants. *Fuchsias* must be shifted when they have grown an inch or two, and kept moist until fresh root-action is established. The sowing and pricking off of flower-garden stock must be persevered in; also the putting in and potting of cuttings of *Verbenas*, *Ageratums*, *Alternantheras*, *Dahlias*, *Salvias*, &c. Place *Dahlia* roots and *Marvel of Peru* in heat for increase. Prick off seedling *Daisies*, *Violets*, *Polyanthuses*, *Ranunculuses*, &c., in cold pits. Give all the air possible to *Auriculas*, *Pinks*, *Carnations*, &c., keeping them, in fact, out of doors when the thermometer is over 40°.—D. T. Fish, *Bury St. Edmund's.*

FRUITS.

In-Doors.—*Pine Apples:* The directions given last month for fruiting plants hold good during this. Take advantage of fine weather to shift the whole of the young stock; all plants that are well rooted may have a liberal shift at once, but any plants that are not well rooted should have the greater part of the soil shook from the roots and be repotted in the same sized pots; and after they have filled these with fresh roots, then they should have a liberal shift. Under no circumstances should a badly-rooted plant be shifted into a larger-sized pot. Pines will grow well in a variety of soils, but will not thrive in chalk or sandy soils. A good turfy loam of an adhesive nature, with a little deer or sheep dung and some ground bones, answers admirably. I grow them in a sort of peat or bog earth that we get in the park, and they root and thrive amazingly in it without any admixture. If the tan or leaves, or other means of furnishing bottom-heat, require renewing, this is a favourable opportunity for doing so. When potted they should have a bottom-heat of from 85° to 90°, and should be kept close until they root into the fresh soil and begin to grow, when air should be given more freely in fine weather; they will then need watering more freely.—*Vines:* Maintain a nice genial atmosphere in the early house, and keep a steady temperature whilst the fruit is stoning; a night temperature of about 65° will be sufficient, but the temperature during the day should rise to 75° or 80°, with an increase of a few degrees by sun-heat. Be careful to put a little air on early in the mornings, and increase it gradually as the thermometer rises, but remember to close up early in the afternoons. Cold, wet borders, and want of ventilation are two of the principal causes of the many mishaps we hear of with early Grapes. The succession-houses will now require a good deal of attention; stop and tie down the shoots as they require it, and thin the berries as soon as they are fit, attend well to the watering of inside borders.—*Peaches* and *Nectarines:* Attend to the tying down of the shoots in the early house as they advance in growth, removing all that are superfluous. The fruit should again be gone over and a few more thinned out, leaving rather more than sufficient for a crop until after the stoning. Syringe the trees carefully on fine days after the house is closed, and keep up a nice genial atmosphere. Attend carefully to the watering of inside borders, and ventilate freely when the state of the weather permits. Pay timely attention to the thinning of the fruit, and the disbudding of the shoots in the succession-house. Give abundance of air in mild weather to trees in flower. —*Figs:* Stop the shoots when about six inches long, and remove all superfluous ones; syringe the trees twice daily, and keep a genial atmosphere; keep inside borders well watered, and give plants in tubs and pots some liquid manure occasionally to assist the swelling of the fruit.—*Cherries:* When the fruit is

stoned, the temperature may be raised to about 55° or 60° at night, and to from 65° to 70° by day; give air freely in fine weather, and attend well to the watering.—*Strawberries:* Plants in bloom should have abundance of air and light, or they will not set their fruit. When the fruit is set and thinned, the plants should be put into a warmer and moister atmosphere, near to the glass, and kept well watered, and two or three times weekly should have liquid manure.

OUT-DOORS.—With ordinary weather we may anticipate a good crop of fruit this season. The weather during the last month has retarded vegetation. Materials for covering *Wall trees* should at once be got ready, and applied as soon if wanted. Whatever kind of protecting material is used, it should be so contrived as to be put up and taken down at pleasure, with very little labour, so that the trees may during the day-time have all the air and light possible when the weather will permit the covering being let down. The great point is to keep the blossoms dry until the fruit is set. All nailing should be brought to a close as soon as possible.—M. SAUL, *Stourton, Yorkshire.*

VEGETABLES.

Sow a succession of *Peas* of some such sorts as Carter's First Crop, Veitch's Perfection, Ne plus Ultra, &c. Make fresh plantations of *Globe Artichokes*, and dig deeply around old stools, removing carefully all but the five strongest shoots, manure heavily subsequently, and return the soil around them. Prick out *Cauliflower* and *Cabbage* plants, filling up all the vacancies in crops of the latter caused during winter; mould up subsequently, as well as all other such subjects as *Peas, Beans, &c.* Make a sowing of *Brussels Sprouts, Borecole,* and *Green Savoys,* for early autumn supply. Sow *Parsnips, Leeks, Turnips,* and a small bed of *Onions.* Attend to the planting of *Potatos* immediately the ground becomes fit for the operation. Top-dress *Asparagus-beds*, and do not be too sparing of the manure. Where *Beet* is in demand at the earliest possible period of the later summer months, it is advisable to make a small sowing during the second week. *Summer Herbs* generally should be sown in pans or pots, and placed in a little heat, especially *Sweet Basil.* Finish transplanting autumn-sown *Onions* where, owing to an inclement period, this has not already been done. Finish planting *Garlic* and *Shallots.* A few *Kidney Beans* may be sown in a warm sunny sheltered aspect, for a chance crop, affording slight artificial protection should severe weather ensue. Towards the end of the month stake *Peas*, placing a more than ordinary amount on the bleakest side, to ward off, more or less, the keener blasts of wind. Sow *Purslane* on a sunny border, and *Parsley* in rows, in an open aspect. Place pots or some such shelter over *Rhubarb stools* to encourage an earlier and more tender supply than would accrue from the exposed plants. Sow a little seed of Walcheren and Snow's *Broccoli* for the early autumn supply.

Encourage the growth of *Potatos, Radishes, Carrots,* &c., in early frames, set apart for them, by giving air freely, and watering them freely, during fine sunny weather. Prick out early *Lettuces, Celery, Tomatos,* &c., in pans, placing them in a slight heat to induce growth. Maintain around *Cucumbers* in frames an uniform temperature, not exceeding 65° by night, with an increase of only 10° by day, unless by actual sun-heat, and with a moderate supply of air. Excessive artificial heat applied to them invariably enervates the plants, and produces a weakly, non-fruitful growth, as opposed to the vigour induced by such moderation as I suggest. Make yet another bed in the *Mushroom house*, as it will come in, before the maggot pest becomes so destructive; give air more freely now, and do not scatter around so much moisture as was needed when a greater amount of artificial heat was made use of.—WILLIAM EARLEY, *Valentines.*

Alice Wilson, Gladiolus

GLADIOLUS ALICE WILSON.

WITH AN ILLUSTRATION.

ONE of the most remarkable varieties of Gladiolus which has yet appeared. It is, in fact, more like a Lily than an Irid, as will be seen from our plate, which is a very accurate representation of the aspect of the plant. It was exhibited by Messrs. Standish and Co., of Ascot, at the October meeting of the Royal Horticultural Society in 1871, being one of a batch of hybrids which owed their origin to the admixture of *G. brenchleyensis* and *G. cruentus*. Though comparatively small-flowered, it is a very pleasing novelty, the white centre and marginal colouration of rosy-carmine, with little of the ordinary flame-like marking on the lower perianth segments, rendering the lily-like illusion all the more striking. We believe it is not yet in commerce, but it will, no doubt, be offered in due course by the fortunate raisers, Messrs. Standish and Co.—T. Moore.

ROSES AND ROSE-CULTURE.

Chapter XVI.—On Gathering and Arranging for Exhibition.

"TO bed with the linnet and up with the lark," should be the motto of the exhibitor. If there are many flowers to look over, there will be close work for the mind, and the work will be somewhat protracted, too, if the best is to be made of everything. If the gathering take place the morning before the day of show (and this is usual), we have not only to consider what each flower is, but what it will become, for wonderful are the changes in buds and flowers in the brief space of a day and night. Buds of to-day, of equal promise to the casual glance, are not of equal beauty as flowers on the morrow. Searching examination, constant comparison, and careful judgment are necessary in making the selection, during which the feet traverse many an unheeded step, and the mind undergoes no ordinary degree of tension; yet the labour is delightful. To gather the flowers in all their freshness and prime—the rose-buds rather than the flowers—before the Fire King has dimmed their beauty—this should furnish hours of perfect enjoyment to the Rosarian. The agreeable coolness of a summer's morn; the aspect of earth and sky ever changing, and scarcely two mornings alike; the pleasing obscurity of distant objects gradually emerging from the waning mist; the brightness of the sun-lit clouds; the transparency of colour and rich perfumes of the newly-expanding flowers, assail the senses with unlooked-for joy, while hill and dale reverberate with notes of melody from the feathered tribe. But we must not be diverted from our purpose even by allurements such as these. Treasure them up in memory for future meditation and enjoyment, if you will, but do not linger over them just now. You have entered on a course in pursuit of honour and renown, and must walk firmly, closely, warily, if you would win the prize.

Let us descend, then, to the level of our task. And first, as to the boxes in which the flowers are to be packed and exhibited; their ordinary size is—

Length, 3 feet. Width, 1½ feet. Depth, 1 foot.

Half of this depth forms the body of the box and half the lid. The lid should shift on and off at pleasure by means of movable hinges. The box is so constructed, that when the lid is off, the depth is 5 in. in front and 7 in. at back; consequently, the lid is the reverse of this, namely, 7 in. in front and 5 in. at back. By this construction, when the box stands on a level surface, the back row of flowers is not shut out from view by the front row, which it would be if the back and front of the body of the box were of the same depth. A box of this size will contain six varieties (three in back and three in front row), three trusses of each variety, that is in all 18 trusses of one stem; or it will contain 12 varieties (six back and six front), one truss of each; or 18 varieties (six back, six middle, and six front) of single blooms. If a greater or less number of blooms be required, the box should be made proportionably larger or smaller, but the size above given is convenient both for handling and staging. No handles are affixed to these boxes, so that if a series of them require to be brought together, they fit closely into one unbroken mass. Preparatory to placing the flowers, the body of the box is filled level with the surface with moss, keeping the freshest and cleanest moss at the top. Zinc tubes, 3¼ in. deep and 1¼ in. wide, with a broad rim to rest on the moss, are filled with rain or pond water, and inserted in the box at the proper intervals. It is the custom with some exhibitors to carry these boxes round among the flowers, and arrange the latter as they are cut from the plants. Others cut all their best flowers, keeping them in water, and arrange them under cover afterwards.

There is full employment for two persons in gathering for exhibition; the one should cut the flowers, and the other receive and arrange them. Let them be conveyed to a cool, light building as soon after they are cut as possible. Arrangement or re-arrangement will probably take place here, and the taste of the operator both as to position and disposition of colours is called into active exercise. Probably, too, more flowers have been gathered than are required, and it is not always an easy task to eliminate the worst. It would appear easier to pack a stand of flowers to please one's own taste than to explain to others the principles on which it is done. It is a good plan to arrange those flowers which are produced in clusters, as *Jules Margottin*, and the globular flowers, as *La Reine*, in the back row; while the single and flat flowers, as *Madame Vidot* and *Souvenir de Malmaison*, are made to occupy the front. Then as to colour, among the best flowers red in its various shades largely predominates, and it is sometimes almost tantalising to be obliged to admit a variety for the sake of colour, in place of a better one whose colour already superabounds. But so it is at present, and we must make the best of it; for too great a sameness of colour, however good the quality of the flowers, would certainly be a point against the exhibitor in the eyes of competent judges. To make the most of the materials at hand, begin by placing

a light and dark red side by side; then a white, a yellow, or a purple; again a dark and a light rose-colour, and so on, thus working two shades of red or rose (the superabounding colours) to one white, yellow, or purple. Supposing this to be done in the back row, the same principle may be followed in the front—only it must be contrived that the flowers in the front row should be as distinct in shade or colour as possible from those immediately behind them; and thus, although we cannot always avoid opposing red to red, we may yet contrive variety by placing in juxtaposition distinct shades of that colour. The beauty of a stand of roses is greatly enhanced by the judicious working in of a few leaves, but they should be leaves of the variety they are attached to, and sometimes prize schedules do not allow even these. A few small buds pushing out here and there are also highly effective, but neither buds nor leaves should be so numerous as to crowd or obscure the flowers; they are to the flowers what hair is to the human head—the absence in either case leaves a baldness scarcely to be coveted.

It is well, especially if the flowers have to travel by railway, to press a little clean moss into the tubes after the flowers are packed, in order to hold them tightly in their places, and to keep the water from jumping out. The arrangement then is finished, and we are free to ponder over the progress of our labour. It may or may not please us, but further alterations may safely be left till the morning of the show. Keep the flowers cool, exposed, if convenient, to the night dews, and do not close the lids till the last possible moment. The boxes may be fastened with lock and key, with hooks and eyes, or with cords. If travelling by railway, accompany them yourself, and never lose sight of them. Arrived at their destination, open the lids of the boxes, fill the tubes with water, make any alterations you please, and close the lids again till the time arrives for leaving the room or tent. Of course the exhibitor will carry with him a box or boxes of spare flowers, to provide against contingencies.

These remarks, read over in a few minutes, are the results of years' experience, and have been thought out little by little. If followed, a fair measure of success may be looked for. With flowers so packed, I have driven 20 miles by road, and afterwards travelled 400 miles by railway, and have not found a flower misplaced or a petal fallen on arrival.—William Paul, *Waltham Cross, Herts.*

GARDEN LITERATURE.

UNDER the title of Handbook of Hardy Trees, Shrubs, etc.,* Mr. Hemsley has recently enriched our Garden Literature with a book which will be extremely useful to a large section of horticulturists, both amateur and professional, since it does something to bridge over the chasm which has so long existed between the scientific and the practical departments of our art. Mr. Hemsley's training has no doubt led him to give somewhat the greater

* *Handbook of Trees, Shrubs, and Herbaceous Plants;* containing Descriptions, Native Countries, &c. Based on the French work of MM. Decaisne and Naudin, entitled "Manuel de l'Amateur des Jardins," and including the Original Woodcuts by Riocreux and Leblanc. By W. B. Hemsley, formerly Assistant at the Herbarium of the Royal Gardens, Kew. London: Longmans, Green, and Co. 1873. 8vo, pp. 687.

prominence to the scientific element, but he has at the same time struck out for himself a distinct track, and has thus made the opportunity to bring home to the reader the practical fruits of much close observation on the characters and history of our more popular hardy garden plants. The bulk of the work, extending to some 550 pages, and embellished by 260 admirable woodcuts, is devoted to descriptions of these plants, including both the woody and herbaceous sections, the natural system being followed in the arrangement of the matter. This prominence has, it is observed, been given to Descriptive Garden Botany, "because it is believed that this branch of horticultural literature is still far behind all others. It

SYRINGA VULGARIS CHARLES X. (¼ natural size).

SYRINGA PERSICA (¼ natural size).

is not supposed that the present work will at once supply the deficiency aimed at, as it is necessarily very imperfect; but as the first of its kind, it may serve to smooth the way for a more elaborate one, and be the means of clearing up some of the errors generally current, as well as leading to the discovery of others." The plan with which the author thus set out has been both honestly and cleverly executed, but we incline to think it would have made his work more useful had less space, either by curtailment or the use of smaller type, been devoted to ordinal and generic characters, and instead thereof a more comprehensive selection of species had been described. We are not, indeed, sure that a translation of the original, eliminating such portions as might not be adapted for English gardens,

would not have produced a still more useful work, since the authors are well-known garden botanists of the highest attainments. Nevertheless, we can conscientiously commend the work as it is, and believe it will in its present state supply a want which has long been felt to exist.

Thanks to the courtesy of the publishers, we are enabled to introduce some of the many illustrations which crowd Mr. Hemsley's pages, and we cannot, perhaps, do better than extract the passages and pictures which set forth the differences between the Syringa of botanists and the Syringa of gardeners, to show the general character of the work :—

"PHILADELPHUS.

"Deciduous shrubs, differing from the last genus [*Deutzia*] in having larger, often sweet-scented flowers, four to five imbricate petals, numerous stamens, and slender filaments. The species, of which there are about twelve, are natives of Central Europe, Himalayas, Japan, and North America. The Greek name of a shrub. These beautiful hardy-flowering shrubs are popularly known under the name of Syringa (Seringat, *French*), or Mock Orange.

"1. *Ph. coronarius.*— This is the common European species, of which there are several varieties in cultivation, including a double-flowered one, and one with variegated foliage. It grows from four to eight feet high, with ovate-acuminate serrulate glabrescent leaves, and racemes of creamy-white fragrant flowers, appearing in May.

"2. *Ph. Gordonianus.*—A very handsome and desirable American species, with flowers nearly double the size of those of the common one. This does not bloom till the latter end of June or beginning of July.

"3. *Ph. grandiflorus ;* syn. *P. speciosus, P. latifolius,* &c.—A shrub 6 to 10 feet high. Leaves pubescent when young, ovate-acuminate or nearly rotundate, irregularly toothed. Flowers white, large, sweet-scented, appearing in June or July.

"4. *Ph. inodorus.*—In this species the leaves are quite glabrous, very obscurely toothed, acuminate, and ovate or lanceolate in outline. Flowers white, large, scentless, terminating the short lateral branches. This blossoms about the same time as the last. North America. *Ph. Lewisii* and *Ph. hirsutus* are also North-American species. These have smaller flowers, and the latter is a very dwarf, hairy shrub. *Ph. Satsumi* ; syn. *P. chinensis,* is a slender-growing species, with long narrow leaves, and large white flowers ; from Japan."

PHILADELPHUS GORDONIANUS (¼ natural size.)

"SYRINGA.

"Deciduous shrubs, bearing simple entire leaves, and large terminal clusters of usually sweet-smelling flowers. Corolla salver-shaped. Fruit, a flattened two-celled capsule, when ripe splitting into two boat-shaped pieces, each containing one or two-winged seeds. Only about half-a-dozen species are known to exist in a wild state, and these are found in South-Eastern Europe, Persia, Northern India, and China. The name is said to be an altered form of the Persian *Syrinx*, which is applied to the common one.

"1. *S. vulgaris.* Common Lilac.—This, with the Laburnum, forms the chief attraction of our shrubberies in spring, and we should as soon expect to see a garden without a Lilac as without a Laurel. Its origin is somewhat uncertain, though it is believed to have been brought from Persia ; at all events, it has been in cultivation about three centuries, and has given birth to many superior varieties, either by natural variation or intercrossing with other species.

The foliage in the common form is smooth, cordate-ovate, acuminate, and of a rather pale green; and clusters of flowers larger than in the other species. Amongst the many varieties now included in catalogues, we may note: *Dr. Lindley*, having extremely large clusters of reddish-lilac flowers; *alba*, pure white; and *violacea*, *rubra insignis*, and *rosea grandiflora*, whose names indicate the various tinges of their flowers. *S. dubia* or *chinensis* is a closely-allied species, if indeed it be specifically distinct. It is commonly called the Siberian Lilac, and differs in its smaller stature, narrower leaves, and more profuse inflorescence of reddish-violet hue. The variety called *rothomagensis*, or *Lilas varin* of the French, belongs here; and the fine variety *Charles X.* should probably also be referred to this race. It is remarkable for the immense size of its panicles, and the beautiful colour of its flowers.

"2. *S. Josikæa*.—This is a shrub of similar habit, but the ovate-lanceolate leaves are wrinkled and of a darker green, and the bluish-purple flowers scentless. A native of Transylvania, blooming later than the varieties of *vulgaris*.

"3. *S. Emodi*.—A tall shrub, with warty excrescences on the stems, large oblong reticulately veined leaves, and lilac or white flowers in erect dense panicles. A native of the mountains of India, scarcely so ornamental as the common species.

"4. *S. persica*. Persian Lilac.—This is a very distinct species of much smaller size, rarely exceeding 4 or 5 feet in height. The branches, too, are slender and straight, and the smaller ovate-lanceolate leaves are narrowed at the base. The flowers vary in colour from rosy-carmine to white, and there is a variety with laciniated foliage. This blossoms in May."

It is announced that a similar volume, relating to tender plants, will be prepared, should the present meet with adequate encouragement.—T. M.

PORTULACAS AS NEGLECTED FLOWERS.

PORTULACAS are generally known as half-hardy, or somewhat tender annuals, that is, in so far as the popularly known sorts are concerned. The genus possesses, however, favourites of a tenderer kind, both tuberous-rooted evergreen, and annual species, all of which need the shelter of a greenhouse. It is to those of the first-named series that I would now direct attention, as they are deserving of far greater attention than at present falls to their lot, especially in these days, when such an amount of space is accorded to plants which bloom less freely, and are not a tithe so beautiful throughout our summer months. Some may urge having tried the Portulaca "again and again," with unvarying ill-success, adding that they are so "miffy" and tender, as to be ill adapted to our varying and inconstant clime. Now, may I ask, wherein lies the cause of what I admit to be a very general want of success?

The plant I specially refer to, namely, *Portulaca grandiflora*, and its varieties *lutea* and *Thellusoni*, and their sub-varieties, comprising such colours as crimson, white, orange, carmine, striped, plain, and variegated, to say nothing of the doubles, has been introduced into this country nearly half a century, during which time the varieties referred to have been garden-born, and hence a certain amount of acclimatisation must have taken place. Moreover, their native home is Chili, with a mean summer temperature of 60°, and where an European climate exists, where the Oak and Beech thrive, and our native cereals grow and succeed. *Portulacas*, I aver therefore, are to all intents and purposes to be classed as hardy annuals with us in this country, and as legitimately so as any kind of hardy annuals can be. It is in the nursing, coaxing, and in-door coddling of them that we err. As a matter of fact, based on the mode of development of the plants, when formed as seedlings, they do not like to be transplanted. To have

their first roots, and downward unmutilated tap-roots, conserved to them, not alone in substance, but also with their primary hold of the soil intact, is an essential to their success. To in anywise injure, destroy, or check these, is to force on them an inheritance of subsequent decrepitude. What is to be done, then? I would answer, do not attempt to grow them in any place but a warm sheltered sunny position. In such a position, having prepared the ground efficiently, sow the seeds broad-cast *upon* a raked surface, and subsequently "pat" it down firmly and flatly. Sow the seeds not later than the first week in May, and let them grow at their own time, and in this way success will be assured.

But I have called them "Hardy Annuals," and I wish to prove the fact beyond cavil. Prepare a moderately deep, rich border, slightly slanting to the early spring sun, and sow as stated above. When the plants have bloomed and are seeding during the subsequent autumn, let them remain where they have grown to shed their seeds: remove the decayed plants away so soon as this is effected, and sow any seeds that may have been saved in some other eligible situation; pat the surfaces down with a spade, and sprinkle a little fine soil, thinly and evenly, over all. If the border is not disturbed until the spring, the seedlings will come up thickly, and bloom in masses of their own accord, and afford a display such as no other method could produce.—William Earley, *Valentines*.

SELECT ANGRÆCUMS.

ALTHOUGH we have from twelve to eighteen species and varieties of this genus in cultivation, we can scarcely point out half-a-dozen that are worth growing in a select collection for their floral beauty. Not many years ago our amateur cultivators of orchids grew nearly all they could obtain, but now this is impossible, since we have from 1,500 to 2,000 species in cultivation, and these numbers are continually being augmented by new introductions; hence it becomes necessary to select those species which bloom freely, bear handsome flowers, and best please our horticultural tastes. The botanical or smaller-flowered species are quite as beautiful and often far more interesting to the botanist, but horticulturists generally prefer to leave these to those who care to examine them closely, while they grow only those kinds which greatly astonish the ordinary observer. We have several small-flowered *Angræcums*—such as the curious blunt-leaved *A. distichum*, for example, but in this short notice a few of the largest-flowered can only be referred to.

Most of the *Angræcums* require the close, warm, and humid atmosphere of a plant stove or East Indian house in order to grow them successfully. We have, however, a solitary exception in the pretty white-flowered *A. falcatum*, a native of Japan. These plants grow best in a compost of living sphagnum moss, with lumps of charcoal and crocks, taking great care to have the pot thoroughly well drained. If peat is used in the compost it should be of the best description, and contain but little earthy matter. On the Continent some magnificent specimens

of *A. sesquipedale* are grown in sphagnum only, but this is of the best quality obtainable, and great care is required in watering plants potted in moss alone. These plants root vigorously in a fresh open compost, and especially in the fresh green layer of moss on the pot-tops. The roots are very thick and fleshy, adhering very tenaciously to the sides of the pot; indeed, it is often best to break the pot rather than break the roots in attempting to turn the plant out of the pot. When well grown, these plants are very effective either for exhibition or home decoration. I will now glance at the six best species in cultivation for general purposes:—

A. BILOBUM (*Cape Coast*).—This is a very free-flowering species, and remarkably easy to grow. It generally flowers during the winter season, a small plant often producing two to four drooping spikes of its pretty flowers, which are of a white colour, the apices of the sepals, petals, and lip being suffused with pale salmon-red. This plant grows well either in a basket or pot, and requires a copious supply of water at its roots during most part of the year. The flowers last a fortnight to three weeks in perfection.

A. CITRATUM (*Madagascar*).—This is small compared with *A. sesquipedale*, but at the same time it is one of the most delicately beautiful in the group. It has closely arranged leaves, and bears slender, pendulous, flower-spikes, even when in a small state. The flowers are very symmetrically arranged in this, as in several other species, and are of a pale sulphur or lemon-yellow colour, the dorsal sepal being much less than the other segments of the flower.

A. EBURNEUM (*Madagascar*).—One of the strongest-growing species of the family, bearing bright green distichous foliage, 18 in. to 2 ft. long. The flowers are borne on a long erect spike, nearly as thick as the little finger, and as long, often longer, than the leaves. They are about two inches across, the sepals and petals green, the lip of a pure ivory white, with a greenish centre. This species flowers freely about January and February, lasting from four to six weeks in beauty. A slender-growing variety of this, bearing greenish flowers, is the *A. eburneum virens* of gardens, while another larger-growing form than the type is called *A. eburneum superbum*.

A. ELLISII (*Madagascar*).—This species is of comparatively recent introduction, and must at the same time be considered one of the finest in the group. The leaves are about a foot long and lobed at the apex; the spikes are arcuate, nearly twice the length of the foliage, bearing from twenty to thirty pure white flowers, which have a salmon or cinnamon-coloured spur five or six inches in length. A side view of a flower reminds one of a cockatoo much more forcibly than that of *Peristeria elata* reminds one of a dove!

A. PELLUCIDUM (*Sierra Leone*).—This noble-looking plant has leaves not unlike those of *Phalænopsis grandiflora*, of a bright shining green colour. It bears numerous pendent spikes of closely-arranged crystalline flowers during December and January. The flowers are of a pale colour, and glisten something like a melting snow-flake. It grows well in either a pot or basket suspended near the glass. A pair of fine plants bloom very freely in the collection at Kew.

ANGRÆCUM SESQUIPEDALE (from a Photograph).

A. SESQUIPEDALE* (*Madagascar*).—Of all the species in cultivation, this must certainly be considered the noblest and the most curious in structure, although the spur is hardly a foot and a half long, as its specific name would imply. This plant grows from a foot to nearly three times that height, and bears closely arranged dark bluish-green foliage, from the axils of which the stout flower-spikes are produced. These spikes bear from two to four great waxy flowers, which are often seven to eight inches across; when they first open they are greenish, but eventually turn to a waxy white, and like most of the other species, are perfumed very strongly AT NIGHT. A well grown plant of this superb species is a noble object for exhibition, or valuable for choice cut flowers. It lasts about three weeks in perfection. Three or four plants of this species, and a like number of A. eburneum, have lately (January) been flowering very profusely with Mr. Mitchell, gardener to Dr. Ainsworth, of Lower Broughton.—F. W. BURBIDGE, *Fairfield Nurseries, Manchester.*

NAILING *versus* WIRED WALLS.

AFTER close observation, and carefully weighing the advantages which each of these systems possesses, I have come to the conclusion that the old-fashioned nailing is the best. This conviction has been gradually forced upon my mind through the frequent recurrence, within the last dozen years, of disastrous spring frosts, that have repeatedly disappointed the reasonable hopes of many a careful Peach-grower. The advantages of Nailing, on a sharp frosty night, whilst the trees are in bloom or after they have set, and by which the shoots are made to lie in absolute contact with the bricks, cannot fail to have been observed by anyone interested in these matters; but with me it was more apparent last spring than before. In common with the greater part of the kingdom, we experienced in this locality a frost that scattered destruction right and left, just when the Peach-bloom was fully open, and from which few escaped. So far as my own observation, through the season, went, I did not see a single tree on a wired wall with a dozen fruit upon it.

We had here a good crop on all our trees, except two of *Teton de Venus* (a favourite late Peach with me, and one that is not sufficiently well known), but four-fifths of the flowers that escaped the frost were produced on the side of the shoots next the wall, and were in absolute contact with the bricks, so much so that we had to go over the whole of the trees and loosen and re-nail a great portion of the bearing wood, so as to give the fruit room to swell. I have no doubt I speak within the mark when I say, that we had not fifty Peaches or Nectarines that were not produced on shoots that were in absolute contact with the wall. The trees are partially spurred by summer pinching, but I did not see a single blossom that escaped on the spurs. This, it will be said, is nothing new, and only what always occurs more or less in similar seasons. I am aware that it is so, but the advocates of the wire system seem to lose sight of the fact. The loss

* For the accompanying figure of this plant, taken from a specimen exhibited by W. Terry, Esq., of Fulham, we are indebted to the *Gardeners' Chronicle.*

of the crop of Peaches on the open walls is a serious matter, and one that causes a very great void in the dessert: but except in low damp situations, I hold that open-wall culture is not so precarious as the outcry we often hear against it at the present day, would lead us to conclude.

I use a ten-inch moveable coping-board, with old fishing-nets hung in front, and keep as much of the March sun from the trees as I can without danger of injuring them by too much shading. I defer the nailing as late as I can, so as to keep the bearing wood away from the radiating influence of the wall: keep the trees at all times free from insects; and water the border copiously whenever it is required, from the time the fruit is set until the wood is matured in autumn. How often do we hear the complaint that Peaches and Nectarines are continually dying off in some soils—generally where it is light, with a dry subsoil! If the garden engine were more freely used upon them, with no stint of water at the roots, the evil would disappear.—T. Baines, *Southgate.*

SUCCESSIONAL CAMELLIAS.

TOWARDS the end of the blooming period is a good time to make a selection of Camellias for flowering at different seasons. The plants might be assorted into two or three groups for this purpose, thus: first, second, and third earlies, and natural-season Camellias. The first should be placed in heat in January, and the two succeeding batches should succeed them at intervals of five or six weeks, the last of all having the coolest *régime* that can be given them, consistent with the advanced period of the season, and the temperature best fitted for the formation and maturation of their buds and wood. Camellias bear heat well in their growing and ripening state, and it is in that condition only that they may be forced with safety. By subjecting the plants to a temperature of 55° to 65°, they will soon make wood, and set their blossom-buds. When this is accomplished, the temperature may be gradually lowered, until the coolest summer-house that can be provided, or a sheltered spot out of doors, will be the most suitable for them. Each of the first two or three batches should be put through this *régime* in succession. The result will be that the first batch will begin to flower in September and October, the second in November and December, the third from December to February, and the last will take up and carry on the Camellia season till April, and even May. How much more useful this system of succession than that of a cumulative rush and glut of Camellias, and then a dreary blank of nine or ten months!—D. T. Fish, *Hardwicke.*

TROPÆOLUM TRICOLORUM.

VERY showy, and very valuable as a decorative plant during the spring months, is this charming climber, when it is well grown. Thirty years ago it was considered a good exhibition plant, and was often to be seen at the spring shows in London and the provinces, but now it seldom or never puts in an appearance, and it is not grown in plant places as much as it deserves.

Its culture is very simple. It will grow in any light, rich soil; a compost of loam and peat with a little rotten dung and sand suits it admirably. The tubers should be potted about the beginning of September, about which time they generally begin to grow, in pots six, eight, or ten inches in diameter, according to the size of the tubers. The pots should be well drained, and the tops of the tubers should be level with the soil when potted. The wire trellises, of whatever shape or form they may be, should be fastened to the pots immediately after the tubers are potted, and should be made quite secure, so as not to move. One or two pieces of small sticks should be placed across the trellises at bottom, about an inch above the soil, for the young shoots to rest on; this is better than letting them lie on the soil. When the shoots are sufficiently long to be tied to the trellises, great care should be taken not to tighten them too much, as they may break off with any sudden jerk the trellises may get; great attention should be paid to the training of the shoots as they advance in growth; the plants should be looked over every morning, and any shoots that require it should have a tie; it is better to attend to them daily than to allow them to go for a few days untied, as they run up the wires and are not easily loosened without injury. Great care should also be taken to keep the shoots well tied about the bottom part of the trellises, to get the whole neatly and properly covered. The plants should be frequently turned about, if globe-shaped or cylindrical trellises be used. They will bear a low temperature without much injury, but they do best in houses where the temperature is never allowed to fall below 45°. Much water will not be required for some time after the tubers are potted, nor until they begin to root freely; it should be given carefully during the winter months, but as the spring advances it should be given freely. The plants will then grow rapidly, and if proper attention is paid to the training they will be objects of great beauty towards the end of April, and will continue so till the end of June.

After they have done flowering and have died down, the tubers should be taken out of the soil and put into some dry sand, in any cool dry airy place, where they will be safe from mice. Here they may remain until the following September, when they should be again potted and treated as before. It is advisable to look over them occasionally, and especially during August, as they may begin to grow before they are potted, and when this happens it is not easy to pot them without breaking the young shoots. I believe the principal reason why this plant is not more grown, is the difficulty which some have in increasing it*; but as the plant seeds freely, there should be no difficulty in increasing it. The seeds are sometimes a long time in the soil before vegetating, which leads people to think they won't grow. But if the following plan be adopted, there will be no difficulty about getting them to grow. Steep the seeds for twenty-four or thirty hours in cold water, then with a penknife take a small bit of the outer covering off, sow them and place the seed-pots on the hot-water pipes

* We have been informed that young tubers may be obtained to any extent by simply layering the young shoots round the sides of the pot in which the main tuber is growing, repeating the process from time to time as the shoots lengthen.—T. M.

tch lith.

J.N.Fitch imp

Geonoma Martiana Seemanni

of a Pine pit, when the young plants will very soon appear. I learned this from a worthy gardener with whom I lived as foreman more than thirty years ago, and who grew this plant very well, better, indeed, than most people; by his directions, I treated the seeds as just mentioned, and the result was that a great number of seedlings were raised.—M. Saul, *Stourton, Yorkshire.*

GEONOMA MARTIANA var. SEEMANNI.

WITH AN ILLUSTRATION.

One of the most distinct and striking of the dwarfer Palms. The beautiful specimen here represented is from the rich collection of Sam Mendel, Esq., of Manchester—which, unfortunately, is about to be broken up and distributed by auction. The plant is very rare in cultivation, very few having been raised from the batch of seeds brought over by the late Dr. Seemann, after whom it is named. Unlike many Palms, its foliage is similar throughout its different stages of growth, varying only in size. The leaves are wedge-shaped at the base and bifid at the extremity, and the only difference observable between them as the plant increases in stature, is this increase of size, and even that is very gradual, since the habit is stocky, and the development slow. The plant was introduced to the nursery of Mr. Bull, of Chelsea, and distributed in 1868.

About 80 species of the genus *Geonoma* are known,—plants which, from their manageable size and handsome foliage, are specially suited for cultivation, but comparatively few of them are yet introduced. Dr. Seemann speaks of them as humble but graceful Palms, often growing beneath the shade of such lofty kinds as the species of *Mauritia*, *Attalea*, &c., and bearing about the same relation to them as the Hazel does to the Oak in our European woods. The stems are usually from 6 ft. to 10 ft. high, sometimes reaching to 15 ft., and being about as thick as a walking-cane. The species with entire leaves are said to be used for thatch, and Dr. Spruce praises in the latter respect the swallow-tailed kinds like that represented in our plate, and which have entire bifid leaves. Dr. Seemann's experience, however, did not coincide with this, for besides being troublesome, he found them to be not very durable. The plant now illustrated is found in Central America, and Dr. Seemann, in a communication to the *Gardeners' Chronicle*, refers to its use during his stay in the Chontales district as an indifferent kind of thatch.—T. Moore.

THE APPLE: ITS CULTURE AND VARIETIES.—Chap. III.

No rules for our guidance in matters like this can be laid down so positively, but that exceptions will crop up in practice. Our Amateur friends must not, therefore, construe my remarks, in the last chapter, on lifting, root-pruning, and transplanting too literally, because some varieties, especially when worked on the Paradise stock, possess naturally so fruitful a habit of growth, are so prolific in the production of fruit buds, and so little inclined to run to wood, that they rather need to be encouraged to make growth by extra feeding, than

to be weakened by cutting off the supply of food. When, therefore, the appearance of the tree indicates an over-abundant formation of fruit buds, and it makes but little growth, we must understand, either that it has received a sufficient check for the time, or else that it is naturally a slow-growing prolific sort—in both of which cases a departure from general rules is necessary. In the former case it only needs to be left alone, without root-pruning of any sort, until a more vigorous habit of growth is resumed: in the latter case, dressings of a rich compost of loam and rotten manure must be applied to the surface, and growth must be encouraged in every way.

There are, however, comparatively few varieties so amenable to treatment as this. The great majority of sorts, and among them some of our most esteemed varieties, are of a vigorous habit of growth, and no amount of pinching-back will, of itself, be sufficient to throw them into a bearing state, so that lifting and replanting must be resorted to. It is true that the processes of shortening the growth from time to time, by depriving the tree of a good portion of its foliage, has apparently the effect of interfering with the action of the roots; but it does not always lead to the formation of fruit-buds, its tendency being merely to check growth, which is resumed as soon as the roots recover from the check. But lifting the tree completely out of the ground and replanting it, invariably conduces to the formation of fruit-buds, for the reason before alluded to, namely, that the vitality of the tree being threatened with extinction, it obeys at once the universal law of nature. Here, I may add, that a tree which has been constantly and carefully pinched back during the growing season, but whose roots have been left untouched, is not nearly so likely to make a fruitful tree as one which has not been pinched back at all, but only carefully lifted and replanted at the proper season, and regulated as to shape by a careful winter pruning. This goes far to prove that the two should go hand in hand; and that the condition of the tree, as it stands before the operator, is the safest guide as to the mode of treatment most likely to ensure the end in view.

Now the knowledge which should enable the amateur to distinguish between these various stages and conditions of growth is not intuitive, and can only be acquired by experience; but he need not despair. A couple of years' close observation will go far to make them plain, and the pursuit of this knowledge is a most interesting and absorbing occupation, as almost every tree has something peculiar to itself, and although they all come under certain general rules, the application of those rules must be regulated by the condition of the individual trees.

We come, now, to the consideration of Planting. The ground should all be prepared and ready for that purpose by the middle of October, which, taking the majority of seasons, is the best time to plant. In early dry seasons it may be done earlier, because the wood will be ripe; in late wet seasons it ought not to be done later, because the lifting gives the tree just that check which helps to ripen the wood. Now the reason for this being the best season, may be deduced from two facts: the first is, that at that time the earth still retains a large propor-

tion of the heat infused into it by the influence of the summer's sun; and the next is, that in consequence of that temperature in the earth, the rooting process commences immediately, and the trees are safe. But if planted late, when the earth's temperature has become low, the roots remain dormant until the revivifying influences of spring-time and the increasing power of the sun, have begun to influence the root-action; and it is during this dormant season that the vital principle often becomes extinct.

The process of planting is simple enough. Measure out a distance of 3 ft. from the edge of the walk, and take that as the centre of the hole. For pyramid trees, drive in a stout stake at once at that point; remove the earth to a depth and width proportionate to the extent of the roots, and tread over the bottom rather firmly to guard against its sinking; then place the tree against the stake, taking care that its collar, or that point where the roots commence to radiate, is at least 3 in. above the general level, as represented by fig. 1 (p. 32). For trees on the Paradise stock it is quite an important matter that the point of junction between the stock and the scion should, after all is settled down, be at least 3 in. above the surface of the soil; because if the point of junction is covered with earth, the scion will throw out roots, and the effect of the restrictive stock be completely neutralised. This is one reason why I recommend treading the bottom firmly before filling in, as I have seen trees, when planted on light ground, sink into a hole by the end of the first season.

In filling in the earth about the roots, let it be well pulverised; see, too, that the roots are carefully laid out, so as to radiate all round, and also that the earth is well worked between the interstices of the roots. After all is filled up, a gentle pressure over the surface will do no harm, but avoid trusting to that to keep the tree in position; this must be done by fastening the pyramids to a stake, while bush trees will be best secured by driving in two short stakes, one on each side, and fastening a shoot to each. It is always best to take these precautions at first, as trees swayed about by high winds cannot fix their roots properly, and frequently a cavity is formed around the stem, which often stands full of water, and cannot but be injurious.—JOHN COX, *Redleaf, Kent.*

TRICHINIUM MANGLESII.

ABOUT as unlikely-looking a claimant to the title of an "Amaranth" as can well be imagined—viewed, of course, from a non-scientific point of view—is the above plant, on which I purpose making a few commendatory and cultural remarks.

To those who possess the plant and have seen it bloom, description is unnecessary; but as there are some, nay, many, who know it not even by name, I must say a word or two anent its appearance.* Rising from the surface of the pot in which it is cultivated, is a somewhat sparse tuft of lanceolate olive-green leaves, a few inches in length, and possessing no special character that need be

* For a coloured figure of TRICHINIUM MANGLESII, by Mr. Fitch, see FLORIST AND POMOLOGIST, 1864, 217.

further alluded to: from which it may be concluded that as a "foliage" plant its pretensions are *nil*. In early summer it sends up its dense tufty-headed bloom-spikes, elevated on stalks some eight or nine inches long; these gradually unfold their rosy-tinted calyces, which are covered with long white hairs, softening down their tint, and giving an indescribable beauty combined with elegance and lightness to each spike. To my fancy, had not the name "Love in a Mist" been already appropriated, it would have been the very name for our plant. These flowers are produced about May, and in a dry situation, on a shelf near the glass, the plants continue in their full beauty till October, being admired by every one who sees them on account of their marked peculiarity of character.

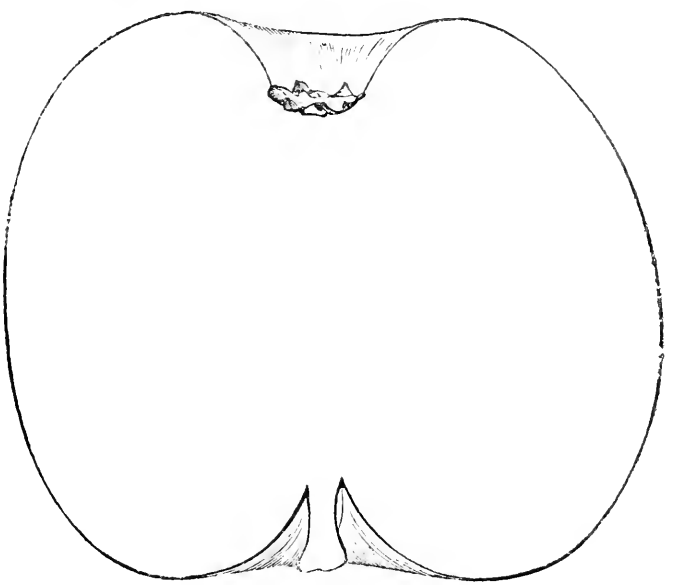
My readers will, I think, admit that I have made out a good case on behalf of the more general culture of the *Trichinium*. It has, however, a still further recommendation. In one of those really elegant and beautiful bouquets of dried flowers and grasses, in which nature is to no small extent indebted to art for the brilliancy of its colours, I saw, a few weeks ago, two of the spikes which I have endeavoured to describe inserted, just as taken from the plant, perfectly dry, and to all intents "everlasting;" they added a charm to the whole group, much the same as a Bird of Paradise would impart to a case of highly-coloured stuffed birds —the charm of elegance, brightness, grace, and beauty. As the spike dries, it almost doubles in size by the reflexing of its lower flowers, and then, and then only, is it to be seen in its full and unfading beauty.

The question will readily suggest itself—Why is a plant so beautiful not more generally met with? There are, I think, several reasons to account for this. The first is, that when first introduced by our indefatigable friend, Mr. Thompson, of Ipswich, it was assumed to be a hardy plant; this, however, it is not. Coming from Western Australia, it is not only tender, but very impatient of damp, in the winter time especially; and I know many instances in which it was planted out either in a border or rockery, and as a matter of course, disappeared, without blooming, the first winter. The second reason is, that it rarely ripens seed—never has it done so with me, and hence one means of rapid increase is lost. A third reason is, that during winter it often loses all signs of growth, in fact, rots at the crown, and doubtless has often been thrown away as dead, whereas its roots retain life almost as tenaciously as its flowers retain their beauty, and had the principle of faith been more largely exercised by the cultivator, he would have been rewarded by a growth of buds coming from the roots. Herein is the secret of its increase—by root-cuttings. I have only to-day (February 20) divided my plant into half-a-dozen root divisions, each one having a growing bud, and from these I hope to obtain, and doubtless shall succeed, a continuation of bloom all the summer through. As I before said, the nearer to the glass it is kept the better, and it must not be over-watered. In its early blooming stage, it is, as a button-hole flower, perfection itself, when backed up by a small leaf of the charming bright-green *Meum athamanticum*, a plant, by the way, that ought to be cultivated in every garden for this special purpose.

There is belonging to the same genus *Trichinium*, another species which I remember being much struck with years ago, in looking over a set of dried Australian plants; it is called *T. alopecuroideum*, and in it the hairs are of a sulphur-yellow and the flowers crimson, approaching to scarlet, and deeper than in the subject of my notice. Let us hope that ere long we shall have the pleasure of seeing it in a living state, as it is likely to prove a worthy rival to the now more familiar plant.—JAS. C. NIVEN, *Hull Botanic Garden.*

PEASGOOD'S NONESUCH APPLE.

THIS new Apple appears to have originated in the garden of Mr. Peasgood, a town councillor of Stamford, the seed having been planted by Mrs. Peasgood. Some doubts have been expressed as to its being sufficiently distinct from the Blenheim Pippin, but they have been fully met by the counter-opinions of such well-known authorities as Mr. W. Ingram, of Belvoir, Mr. Gilbert, of Burghley, and Mr. Laxton, of Stamford. We have to thank Dr. Hogg for the accompanying woodcut and description, from the *Gardener's Year-Book* for 1873 :—



PEASGOOD'S NONESUCH APPLE.

"This handsome Apple was presented before the Fruit Committee of the Royal Horticultural Society, of September 18 [1872], and received a First-class Certificate. It is one of the most handsome autumn Apples in cultivation. The fruit is very like a large Nonesuch, and not unlike a well-grown and highly-coloured Blenheim Pippin. It is above the medium size, roundish, and somewhat oblate. The skin is yellow, overspread on the sunny side with red, which is

copiously streaked with dark crimson streaks. The eye is very large and open, set in a deep, round, and even basin, and with short, depauperated segments. Stalk short, deeply inserted. Flesh yellowish, tender, very juicy, with a sweet and sprightly flavour, and pleasant aroma. It is a valuable culinary Apple, and not unworthy of the dessert."—T. M.

MAY TREES FOR THE CONSERVATORY.

PAUL'S Scarlet Thorn was my first pot and pet May-tree. I was anxious to see it flower, and the representations of its beauty were so vivid, that I resolved to anticipate time, and help it out by gentle forcing. It exceeded my utmost expectations. And then the question occurred, If this grand, brilliant, double Thorn is so beautiful, why not try others, single and double? Since then Mays in pots have become part of our regular means of furnishing flowers of interest and beauty all the year round. And they fill a niche of time so admirably that probably they would be voted equal to Roses, Lilacs, Deutzia, Spiræa *(Astilbe)*, or any other indispensable flower. Our plants are mostly pyramidal, but any form will do. I find, however, that form is almost naturally acquired by Thorns, and gives a maximum of bloom in a limited space. The plants mix well with Azaleas, Camellias, and other plants in the conservatory. Standard tree Mays would also be admirable for rooms, landings, stairs, in halls, &c. The form, however, is matter of taste. By keeping the Mays somewhat under-potted, and plunging them up to the rim in a sunny spot for the summer, they will be almost all flower. They bear moderate forcing well, a temperature of from 45° to 55° being the most suitable, and the atmosphere of a dewy May morning giving them a freshness and a beauty exceeding that of out-door plants. Yes, it is a fact that forced May is more exquisitely fresh, beautiful, and sweet than unforced! The flowers are larger, the leaves finer, cleaner, fresher, and the perfume is struck off in a finer key, with a more enthralling touch of delicate fragrance. What more need be said to set all your readers at Maying in pots! Only this, that no flowers are more admirable in bouquets and vases than those of forced Mays.—D. T. FISH, *Bury St. Edmund's.*

DEARDS' AMATEURS' HEATING APPARATUS.

I AM pleased to see a favourable notice of this apparatus at p. 69. Having been one of the judges in the late Boiler contest at Birmingham, at which this stove came under my notice, and was awarded a Bronze Medal by myself and colleagues, I feel flattered by your favourable allusion to it. There is one now at work at the Rectory, Hatfield, and the Hon. and Rev. W. C. C. Talbot considers it a little wonder. I fully believe it to be the very best and cheapest portable stove for heating hot-water pipes that has ever been invented. This stove can be removed from house to house if required. The apparatus requires no fixing, the stove being simply placed on a stand of bricks, while the joints of the pipes being made with India-rubber rings, they can

quickly be pulled to pieces, and with little trouble as quickly be put together. Indeed, the whole apparatus may be taken down and put up ready for work again in a couple of hours. To those who require a small apparatus to heat a cucumber-house or greenhouse, &c., and one, moreover, that requires but little attention, and leads to little expense, these stoves will, I believe, be really invaluable. All who have a greenhouse should possess one: indeed, every gardener who has any quantity of glass would do well to have one by him in case of need, for we never know when a boiler may collapse. From 100 to 150 feet of hot-water piping may be heated for about fourpence per day, the stoves burning from eight to twelve hours without attention.—EDWARD BENNETT, *Gardener to the Marquis of Salisbury, Hatfield, Herts.*

GARDEN GOSSIP.

FOR the first time in Europe, we believe, the Bunya-bunya, *Araucaria Bidwillii*, has borne cones in the temperate house at Kew. The tree which produced the female cones is one of the two first imported in 1842. The cones are borne in clusters near the top, the average size being 8 inches long by 4½ inches diameter. The tree is 26 feet high, its branches cover a circumference of about 60 feet, and its trunk, at 1 foot from the ground, measures 2 feet 7 inches in circumference. The seeds of Araucaria Bidwillii, like those of A. imbricata, are eaten, and form very important articles of food to the inhabitants of Moreton Bay.

—— THE beautiful *Hippeastrum pardinum* proves to be a very free-flowering plant. With Mr. Ritchie, of Hampstead, a bulb has flowered four times in one year, and on two occasions there were two flower stalks blooming at the same time; altogether 16 fine flowers were developed from the one bulb, another flower-stalk having since come up. The plant has never been rested, nor yet kept at all dry. Few bulbous plants would give such a return as this, and anyone possessing a small stove may very easily grow it.

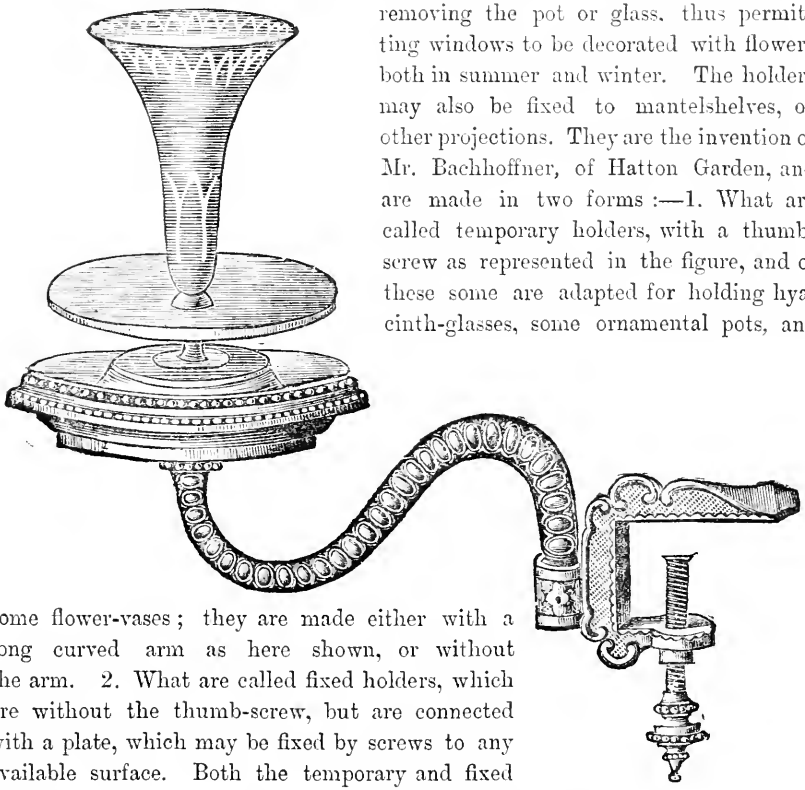
—— AMONGST the newest Cannas, the French nurserymen are offering one named *Canna M. Celler* (Chrétien), a variety raised from C. Bihorelli, but said to be dwarfer, and to have green leaves. The flowers are very large, of a rosy brick-red, and grow in large bifid or trifid spikes. This variety is described as being the best of all those cultivated specially for their flowers; if so it will be an important acquisition both in the subtropical garden, where it will serve to liven up the great masses of Cannas we often see planted, and also in the flower garden, where by its numerous spikes of large showy flowers it will almost rival the Gladiolus.

—— THE origin of the *Lombardy Poplar* has often been a matter of conjecture, the general opinion being that it was a seedling or sport from Populus nigra, a European species, which, when grown in America, is said to produce leaves which are downy when young and ciliated at a later stage; this North-American form has been considered a distinct species under the name of Populus hudsonica. Professor Koch relates a curious fact as having been observed in the nurseries of MM. Simon Louis, of Metz, namely, that many of the seedlings of this American variety produce the fastigiate form peculiar to the *Lombardy Poplar*, and this, so far, seems to confirm the general belief.

—— MR. LYNCH WHITE, whose name is well known to horticulturists as that of a successful *Hot-Water Apparatus Manufacturer*, has recently retired, and is succeeded by his son, who, in conjunction with Mr. Dunbar and others, carries on the same business under the title of the Thames Bank Iron Company.

FLOWER-VASE HOLDERS.

DRAWING-ROOM Gardening and Window Gardening will be greatly facilitated by the elegant contrivance of which we subjoin a figure. By its means, either ornamental pots, or flower-vases, or hyacinth-glasses can be so fixed to a window-sash that the window may be opened without removing the pot or glass, thus permitting windows to be decorated with flowers both in summer and winter. The holders may also be fixed to mantelshelves, or other projections. They are the invention of Mr. Bachhoffner, of Hatton Garden, and are made in two forms :—1. What are called temporary holders, with a thumb-screw as represented in the figure, and of these some are adapted for holding hyacinth-glasses, some ornamental pots, and some flower-vases; they are made either with a long curved arm as here shown, or without the arm. 2. What are called fixed holders, which are without the thumb-screw, but are connected with a plate, which may be fixed by screws to any available surface. Both the temporary and fixed forms are made either with a single branch, or with two branches. Various uses will readily suggest themselves; but for indoor gardening, which most concerns us and our readers, they are quite an acquisition.—T. MOORE.



RHODODENDRON BROOKEANUM FLAVUM.

THE *Rhododendron Brookeanum* was one of several epiphytal species of this noble genus originally brought under the notice of botanists by Mr. Hugh Low, jun., having been collected by him during his residence in Borneo. These were described by Dr. Lindley in the *Journal of the Horticultural Society* (iii. 81). The species just mentioned is a close ally of *R. javanicum*, from which it differs in its narrower leaves, less prominent stamens, and less undulated corolla. The first plant, introduced to our gardens by Messrs. Veitch and Sons,

who exhibited it in 1855, had the flowers of a full orange or golden-tawny colour, in which respect it differs from the present desirable novelty, our illustra-

RHODODENDRON BROOKEANUM FLAVUM.

tion of which we owe to the introducers. In Messrs. Veitch's catalogue for 1872, it is described as "a very handsome free-growing kind, introduced by ourselves from Borneo. It is a showy plant, with thick, dark green, very glossy leaves,

and producing freely its bunches of clear yellow flowers, which remind one of the paler varieties of *R. javanicum*. It thrives best in a temperature averaging 60°. It was awarded a first-class certificate at the Royal Horticultural Society's show, April 6, 1869." We gave a coloured figure of it under the name of *R. Lobbianum* in the first volume of the *Floral Magazine*.—T. MOORE.

GARDEN WORK FOR APRIL.

FLOWERS.

AS soon as *Violets* and other spring flowers are out of blossom, divide and replant them; they flower very much better when thus removed every year; indeed, Violets cannot be grown to perfection in any other way. Those who force Neapolitan and other Violets gain a month or two in time, and secure large heads of blossom, by using the earliest plants for division. *Antirrhinums, Pentstemons, Phloxes, Hollyhocks, Pinks, Pansies*, &c., wintered in pots may now be turned out into rich beds or borders. All hardy plants should be got out, so as to leave our hands free for bedding plants next month. See to the enrichment and amelioration of empty space and beds; for as we sow of ground-culture and enrichment now, so shall we by and by reap of beauty. Finish the cleaning, top-dressing, and rolling of walks. Cut turf edgings: late edging makes light clipping. Mow lawns every week; no receipt for velvety turf equals weekly mowing.

IN-DOORS.—Keep the temperature as regular and cool as possible, to prolong the bloom of *Camellias* and *Azaleas;* shade against hot sun. *Heaths, Epacrises, Chorozemas, Pimeleas*, &c., should be stopped when they have done flowering, to increase the number of shoots; for the Greenhouse and Conservatory shelf these plants never look better than in small bushes in 4-in., 6-in., or 8-in. pots. Large *Oranges* in tubs, or planted out, should now have liberal dressings of spent cow and pigeon dung or rich soil, and thorough soakings of manure-water; they are gross feeders in the growing season. *Fancy Pelargoniums* and *Fuchsias* should be kept at the warmest end of the house, close to the glass.

Stove plants and Orchids should now have more heat and moisture. April is also a trying month for shading, the sun mostly playing hide-and-seek with the clouds; half an hour's fitful sunshine often seems to do more mischief to tender foliage than a whole day's regular shining. Plants in full growth will need liberal treatment as regards root and leaf, watering, ventilation, warming, &c. Climbers planted out should now have thorough soakings of water once a fortnight or three weeks; keep their shoots from becoming confused, while encouraging free growth. A loose mode of training is not only the most graceful, but most fruitful in flowers and foliage, and useful sprays for cutting—a great point where dinner-table decoration is the order of the day.

This is a good season to strike cuttings of many stove plants, such as *Pentas, Centradenia, Clerodendron, Plumbago, Thunbergia, Croton*, &c. Also pot off and push on cuttings of winter-flowering *Begonias, Euphorbias, Justicias, Bouvardias, Poinsettias*, &c. The foundation for next winter's beauty must be well and truly laid now. *Caladiums* and *Gloxinias* enjoy manure-water, but it must be carefully kept off the leaves of the latter. *Achimenes*, &c., should be potted off in batches at intervals of six weeks or two months; thus managed, a succession of bloom may be had throughout the season. These are among the most glorious of basket plants, as those who have seen them in the Victoria House at Chatsworth can testify.

In the Pits and Frames examine the pots of *Pinks, Picotees*, and *Carnations* for slugs and wire-worm, which often work sad havoc in the spring; a bit of

potato buried in the soil, examined daily, is still one of the best traps for wire-worm; and the best of all traps for slugs is a sharp eye in the still evening hours. *Pinks*, &c., should now be staked, as well as choice *Tulips*; the latter in beds should also be sheltered from cold winds. *Pansies* in beds should be top-dressed, and protected from slugs. *Polyanthuses*, *Auriculas*, &c., must have all the air possible, and should not be watered overhead; sow seeds on the surface of shallow pans, and cover with moss only. The warmer pits and frames will now be full of seedling plants or cuttings for the flower-garden. Propagation and the nurture of seedlings must still be pushed forward with alacrity. Late-struck *Verbenas*, *Alternantheras*, &c., mostly grow freest in the beds. What is called 'hardening off' often really represents a stint from which the plants do not recover until the season has half gone; more skill is needed to let plants glide safely and gradually from the heat of propagating pits and houses into the open air, than in any other department of gardening. There should be no check from rootinghood to flowerhood; nor need there be, if it is borne in mind that all intermediate states are times of special danger, needing constant care and judgment.—D. T. Fish, *Hardwicke*, *Suffolk*.

FRUITS.

In-Doors.—*Pine-apples:* As soon as the summer crop of fruit is out of bloom, attention should be paid to their swelling, by increasing the atmospheric moisture, and by removing all suckers not wanted for stock; give them liberal supplies of water, and occasionally a dose of liquid manure. Give air freely on fine days, but close up early in the afternoon. The plants intended to fruit next winter, that were potted the beginning of last month, will now be growing freely, and should be encouraged to perfect their growth. The young stock must be kept growing; give them a moist atmosphere and a bottom-heat of about 85°.—*Vines:* When the grapes begin to colour, keep the atmosphere rather drier: give a moderate amount of fire-heat, and an abundance of air when the weather permits; a little air should be given early in the morning, and increased as the thermometer rises, but take care always to close up early in the afternoon. Maintain a moist atmosphere in houses where the fruit is swelling. For Black Hamburghs keep a temperature of about 65° at night, and 80° during the day; while Muscats should have a temperature 5° or 6° higher. Attend to the thinning, stopping, and tying-down of the shoots in the late houses; and thin the berries before they get too large.—*Peaches and Nectarines:* Keep the shoots well tied-in in the early house, and be careful not to get them crowded. When the "stoning" of the fruit is completed, raise the temperature to about 65° at night, with a corresponding increase by day: keep a moist atmosphere by syringing the trees daily, and sprinkling the paths, &c. Water inside borders effectually when they require it. For directions for successional houses, see previous calendars.—*Figs:* Persevere in syringing daily; attend well to the watering, and keep a moist atmosphere until the fruit begins to ripen, gradually raising the temperature as the season advances.—*Cherries:* Attend well to the watering; keep the trees clear of insects, and give abundance of air.—*Strawberries:* There will be no difficulty in getting good crops to set after this, if the plants are kept near the glass, and have plenty of air; to get large, fine fruit, pick off all the flowers as soon as two or three are set on each plant, which will be enough; keep them near the glass, give them plenty of liquid manure, and keep a warm, moist, growing atmosphere until the fruit begins to colour.—*Melons:* Attend to the stopping, thinning, and regulating of the shoots; be careful not to give too much air in cold weather; keep up a steady, regular bottom-heat all through their growth, and water with tepid water.

OUT-DOORS.—There is at present a prospect of a fair average *Fruit Crop* if the weather should be favourable during this and the next month, but as in our changeable climate at this season of the year we have very great and sudden changes of weather, and never know what the next forty-eight hours may bring forth, it is the wisest course not to rely too much on fair weather, but to protect the trees, wherever possible, whilst they are in bloom.—*Grafting* may be continued in the early part of the month, if not already completed. Water newly planted trees in dry weather.—M. SAUL, *Stourton, Yorkshire.*

VEGETABLES.

PRICK out on to a slightly heated bed, formed of fermenting materials, the early-sown *Celery*, placing a light over the plants; make also the main sowing for the winter crop. Sow *Dwarf French Beans* in early localities, in a warm sheltered spot during the first week, making another small sowing or two later in the month in other situations; by so doing the chances are that if no late frosts of any severity occur, early pickings will be the result. About the third week, make sowings of *Herbs*, such as *Basil*, *Parsley*, *Chervil*, &c., upon south borders; also, *Carrots*, *Lettuce* (Paris Cos), *Brussels Sprouts*, *Borecole*, *Broccoli* of the autumnal and mid-winter sorts, *Coleworts* (Rosette), *Nasturtiums*, *Marigolds* (when wanted), and *Parsnips*, if not previously sown, as before suggested. *Radishes* (Turnip-rooted), *Turnips*, *Beet*, *Scorzonera*, *Salsafy*, &c., will need sowing, either for succession or main crops, the quantities being regulated accordingly. *Cardoons* may likewise be sown along the customary prepared trenches, where slight protection will be afforded them. Prick out freely now the stock of autumn-sown *Cauliflowers*, *Lettuces*, *Onions*, &c. Run the hoe freely between all permanent crops when the ground works kindly, being dry enough for the operation. Finish planting *Potatos* at the earliest moment possible, and attend to the early earthing-up of such of the former plantings as are already showing through the ground; also of such crops as *Peas*, *Beans*, *Spring Cabbages*, &c., always earthing them up by anticipation rather than otherwise, as the advantages are greatly nullified by leaving the operation until the base of the plant has been some time exposed to, and hardened by, the action of the air. Prick off such of the early sown *Brussels Sprouts*, *Broccoli* (early autumn), *Lettuces*, *Savoys*, &c., as are so far advanced as to require it. Thin out the crop of *Early Carrots* in frames, and cease giving more water to early frame *Potatos*. *Tomatos* must be hardened off by exposing them gradually to the free outer air, so that at no distant date they will stand uninjured in a draughty cool house. Sow a box or two of *Scarlet-Runner Beans*, which, when up and forming the third or rough leaf, will transplant readily into the open ground, and succeed moderately, if stakes be placed to them forthwith, as a slight protection.

In many instances some amount of *Trenching*, *Digging*, &c., will still remain to be done; especially will the quarters in which Cabbages and other late Sprouts have grown need this.

The *Cucumber* frames should be getting well filled with growth, and hence more air should be allowed, and a more liberal treatment followed. Shut up close, after well damping the interior, about 4 p.m., maintaining a mean night temperature of about 67°; during warm, mild nights, a little air should always be given. Good growers are averse to high night temperatures. Place a dense covering over such *Seakale* as has been kept from growing, and so by keeping the light and air from it, insure a tender, well-blanched supply; no heat is needed at this time to force it, as the weather and the natural growing season will bring it on fast enough, and it is sudden fluctuations of temperature that usually cause toughness.—WILLIAM EARLEY, *Valentines, Essex.*

J. L. Macfarlane Del et Lithe

F W

Violet Gem Primrose

PRIMROSE VIOLET GEM.

WITH AN ILLUSTRATION.

IN the annexed illustration Mr. Macfarlane has very correctly represented the new hardy Primrose called Violet Gem, which was exhibited by Mr. R. Dean at the meeting of the Floral Committee on March 5th, and then received a First-class Certificate. It is a very attractive variety, on account of its clear, bright magenta colour, and its numerous and evenly-set convex head of flowers. We may here appropriately introduce some remarks on Hardy Garden Primroses, by Mr. A. Dean :—

Hitherto the varieties of *Primula vulgaris* with which we have been familiar have been associated with forms and colours far from effective. The ragged outline of the wild variety has largely manifested itself throughout most of the seedlings bred from it, whilst in colour there was little to attract special attention. One of the nearest approaches to *P. vulgaris* is *P. altaica*, which is claimed to be a distinct species, but differs in no great degree, except that the flowers are larger, and of a rosy lilac colour. In the open air, *P. altaica* is somewhat disappointing, its thinness of petal rendering it unable to withstand the rigours of the winter season ; still, in spite of these drawbacks, its ragged outline, and its prominent pin-eye, it is acknowledged to be a gem for the early spring garden.

The new Hardy Primroses, of which Violet Gem is a type, are the results of several years' careful attention and selection, the main object having been to secure kinds that would bloom very early in the year, that were perfectly hardy, and that had good form, effective colours, and that prominent feature in all good flowers of the Primula family—a thrum-eye. One of the most useful breeders for this purpose is *P. vulgaris auriculæflora*, a velvety-crimson early sort, which was also certificated, and which was so designated because of the great similarity between its flowers and those of a good self Auricula. This variety, though an exceedingly shy seeder, proved most effective when used to fertilise some of the then best forms of the common Primrose. It has also been found that seeds from *P. auriculæflora* afforded but scanty variety of colour, whilst many of them ran off into the polyanth form, thus detracting considerably from their value and usefulness. As affording both greater variety and a closer maintenance of the true Primrose habit, the common pin-eyed forms of *P. vulgaris*, fertilised with the pollen of the former variety, proved to be the best female parents ; and although, in order to secure some eighteen or twenty really good kinds, it has been necessary to grow a large number of seedlings, many of which were of very indifferent form, yet the gain has been so ample that further improvements may well be looked for with speedier results. Violet Gem is remarkable for the dense, rich violet hue of its flowers, and its charming bouquet-like habit of throwing its blooms up in a rounded bunch, which is well protected by the foliage; still it is a pin-eyed flower, but the pistil is so far down the throat of the tube as to be quite out of sight. In other seedlings, both the thrum-eye and excellent form are found

combined with pure white, sulphur, lilac, rose, rosy-red, magenta, purple, crimson, and various intervening shades of colour, all of them true Primroses, and as early to flower as are the commonest kinds found in our hedge-rows.

These new forms of the Primrose are not only perfectly hardy, but under proper cultivation can be easily propagated. The greatest danger to the Primrose arises from drought at the roots during the heat of summer; but if the soil in which they grow be moist, then they bear solar heat with considerable impunity. In the case of scarce kinds, it would be wise to grow them in pots for a year or two, keeping them in a cool frame in the winter, or in the greenhouse when in bloom, and then having them plunged in ashes, under a north wall, in the summer, and kept well watered.

In autumn, about the end of September, the plants should be carefully divided, and be either repotted or planted out into beds, and they will get well rooted, and throw up good heads of bloom early in the spring. In any after cultivation, care should be always taken to keep the plants growing all the summer, as that is the great secret of successful primrose culture. When the foliage is burnt up by heat, the old crowns become stunted, the young ones cease to grow, and the plants rapidly become smaller. Therefore, where possible, in hot weather give a little shade, but never allow the plants to suffer from the want of water. —A. DEAN, *Bedfont.*

PICEA PINSAPO.

THE engraving at p. 67 and your remarks will, I hope, direct that attention to this gem of Silver Firs which it so well deserves. It is one of the hardiest of Conifers, and stands the west wind better than most others, and as it grows late in the spring it rarely suffers from spring frosts, whilst *P. cephalonica*, *P. Webbiana*, and *Abies Morinda* often suffer severely. The tree grows slowly at first, and is in general inclined to spread out into a compact bush, when planted on poor soils without any preparation. The best mode of treating trees like these, is to take out a good wide trench all around them, removing all the bad soil to a considerable depth, and replacing it with fresh strong loam. Some trees I treated in this way a few years ago, have very much improved since. This Fir is also much improved and benefited by pruning when it is inclined to grow compact and bushy; by well thinning out the smaller branches, the energies of the plant are directed more to the leading shoot, which in consequence makes stronger and more robust growth than when the tree is not pruned. This Fir likes a rich strong soil. Before planting, if the soil be not naturally very good, it should be properly prepared; when this has been done and careful attention is paid to the pruning, the trees will in general make satisfactory progress.

Many other Conifers are also much improved by taking out a trench all around the trees (when the ground has not been properly prepared at planting time), removing all the bad soil, and replacing it with good loam, as well as by attention to judicious pruning.—M. SAUL, *Stourton, Yorkshire.*

VINES AND VINE-CULTURE.—Chapter II.

CONTINUING my remarks on the propagation of Vines, I now come to (4) *Budding.* The budding of the Vine differs somewhat from that which is ordinarily understood by the term budding as practised with the Rose, &c. In the one case the bud as attached to the bark only is inserted, the whole of the wood being removed; in the case of the Vine, however, the wood of the bud is not removed, but left as in the case of a graft, so that the operation may more properly be termed *bud-grafting.* Fig. 4 shows a "bud-graft" or an "eye" such as was shown by fig. 2, prepared for budding on to the stock, and represents a bud of the ripened wood of the previous season's growth. The mode of performing the operation is simple, it being only required to make a cut on the stock corresponding to the form of the prepared bud, so that the *inner* bark of the stock and that of the bud may unite. This will be more fully explained when I come to speak of grafting proper.

Budding the Vine in the manner here described is not much practised. It is, however, sometimes advantageous, as by its means the bare stems of vines can be reclothed—for the buds can be inserted on any part of the stem. I have had recourse to this method when by accident a shoot has got broken off in the operation of tying down; and it is just at this stage, when the vines are in flower, and the shoots are being tied down, that the operation can be most advantageously performed; but of this more anon.

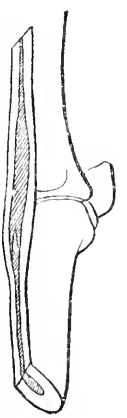


Fig. 4. Bud-graft.

There is another method of Budding Vines which is frequently practised, and that is with the young half-ripened wood while there is still a sufficient flow of sap going on for the formation of cambium to form the union, the bud remaining dormant until the following spring. The bud is taken from a Vine or a shoot in a growing condition, which has just begun to ripen off, as it is called. The bud is cut in the usual manner, with a leaf, as in the case of a Rose, only the wood is not extracted, but is inserted with the bud on to the stock, in the same manner as recommended for fig. 4. The younger the stock on which this sort of budding is performed, the better. It cannot be advantageously performed on very old stems. It is a good plan for rapidly testing the merits of a new sort, since it permits of a great number of buds being inserted on a Vine already established.

5. *Inarching*, or grafting by approach, as the French very properly term the operation, is a method of grafting two growing plants together, and it is very frequently adopted in the case of Vines. It is found to be a safe and an easy process, and there are many ways of doing it. A shoot of a permanent Vine may be inarched on to a Vine in a pot, and a new plant of the permanent Vine be thus obtained; or, and this is most frequently the requirement, a plant in a

pot is so placed as to admit of its being inarched on to a permanent plant. Some perform the operation whilst the plants are yet at rest, but this is not a safe period; others inarch about the time when the first leaves are expanded, when the first gush of sap is over, and at this time inarching can be performed with the very greatest certainty and success. The operation is subject to the same rules as grafting, and will be explained under that head, the only difference being that the scion is not separated from the parent stock until after the union has taken place.

There is another process of Inarching, however, which is very much in favour with many vine-growers, viz., that of uniting the green or growing shoots of the stock and scion. The union in this case is formed very quickly and very effectively, and the inarched shoot in the course of a week or so grows off quite freely. The difficulty in this process is that the stock and scion must necessarily be of an almost equal thickness, and so when it is wished to inarch a young slender vine on to a large-stemmed old plant, it can only be accomplished by the medium of one of the side-shoots. Some growers prefer this method so much, that instead of trusting to simple grafting, they take all the trouble to first strike the eye and grow the plant to a certain size, and then inarch it. It is eminently a safe and sure method.

To inarch, then, is simply to bring two growing shoots or stems together, and to unite or fasten them to each other, as in grafting. As soon as the scion has fairly taken hold, sever it from its own root—partially at first, and finally in about a week after, keeping the stock in subjection so as to allow prominence to the scion.

6. *Grafting.* The Grafting of the vine has generally been considered a somewhat difficult operation, and it is actually so. The mode of performing the operation, that of joining cambium to cambium, or inner bark to inner bark, may be precisely the same; the difficulty of the process lies, not in the operation itself, but chiefly in getting the stock and the scion into fitting condition for each other. The vine is a plant having a most extraordinary flow of sap at the commencement of its growth, so much so that if any portion of the stem is cut at that time, the plant almost bleeds itself to death. If cut in winter, some time before the sap is in motion, this bleeding does not take place, the opened pores seem to get sealed up; neither after the vines have got into full leaf does this bleeding take place. Some recommend grafting before the rise of the sap takes place, when the plants are at rest; this is not, however, at all a satisfactory or successful time, and the reason why it is not so is chiefly this—there is a want of sap or moisture in the stock, to sustain the vitality of the scion until growth commences. In grafting or budding the sap must at all times be partly in motion, and in this case it is not so, and so the pores of both stock and scion which are opened become dried up before they can unite. To graft it as we should an apple, just when the sap begins to flow, would be fatal in the case of the vine, not only in regard to the bleeding of the stock, which might result in death, but

also on account of the great amount of extravasated sap which would continue to flow for days, so that no union could take place. The period which I have found to be the safest and most successful, is just after the first flood of sap is past and before it begins to get dried up. This is about the time when the few first leaves are fully expanded and the grapes are in flower, but is dependent greatly on the vigour of the plant, as a very vigorous plant will have the sap continuing to flow in full tide much longer than a weaker one. A very good test for ascertaining the exact period I have found to be this:—Take the point of a knife, and just prick through the bark; if a little moisture exudes, the stock is in condition for the graft; if there is none, it is too late to attempt it; but should it happen that there is a great flow, continuing for some days, do not attempt to graft so as to cut the stock any more, until this flow has somewhat subsided. This pricking will not under any circumstances from the smallness of the incision do any harm to the plant, but injury would assuredly result were the cut to be enlarged as would be required in grafting; while from the amount of bleeding and the presence of extravasated sap the union could not, under such circumstances, take place.

The stock then being found in condition, it is equally necessary to have the grafts so likewise—they of course should also have been properly cared for. To have the cuttings or scions in proper condition is a most important point in all propagation, and inattention to this is very frequently the cause of failures amongst the inexperienced. In the case of Vines which have to be pruned in winter, the grafts should at that time be selected, and laid in, in soil, behind a north wall, or where they may be shaded from the sun. In a situation like this the eyes will keep fresh until midsummer, and can be used at any time when required. A day or two before they are likely to be required, they should be examined; if late in spring, and the buds are slightly on the move, they are in proper condition; if they have not yet commenced to move, place them in heat, so as to have the buds just a little excited, and in such a state that, when cut through, the scion may appear to be a little moist over the cut surface.

The stock and scion being thus in condition, with the sap flowing to some extent in both, the operation may be performed in the manner shown by fig. 5. Cut down the stalk to any point required, selecting, of course, some suitable part for fitting on the scion—not always easily to be found on old Vine stems. Wherever it may be determined to affix the scion, it is necessary to leave a growing shoot and some leaves on the stalk above this point, for the purpose of drawing off the superabundant sap which will have to be disposed of, and likewise for drawing up nourishment to the scion itself until a union is formed. Vines, it may be remarked, have their buds wide apart, and this is frequently overlooked in dealing with them. In a pruned Vine, there is no vitality in the six inches of wood that may be left beyond a bud; the vitality ceases at the bud, so that were a graft to be put on with no bud beyond it or above it, it could not

grow for want of the flow of sap, which would cease at the bud immediately below it.

The process of grafting may be performed in various ways, which it will be unnecessary to allude to here. The simplest and best is that represented by our

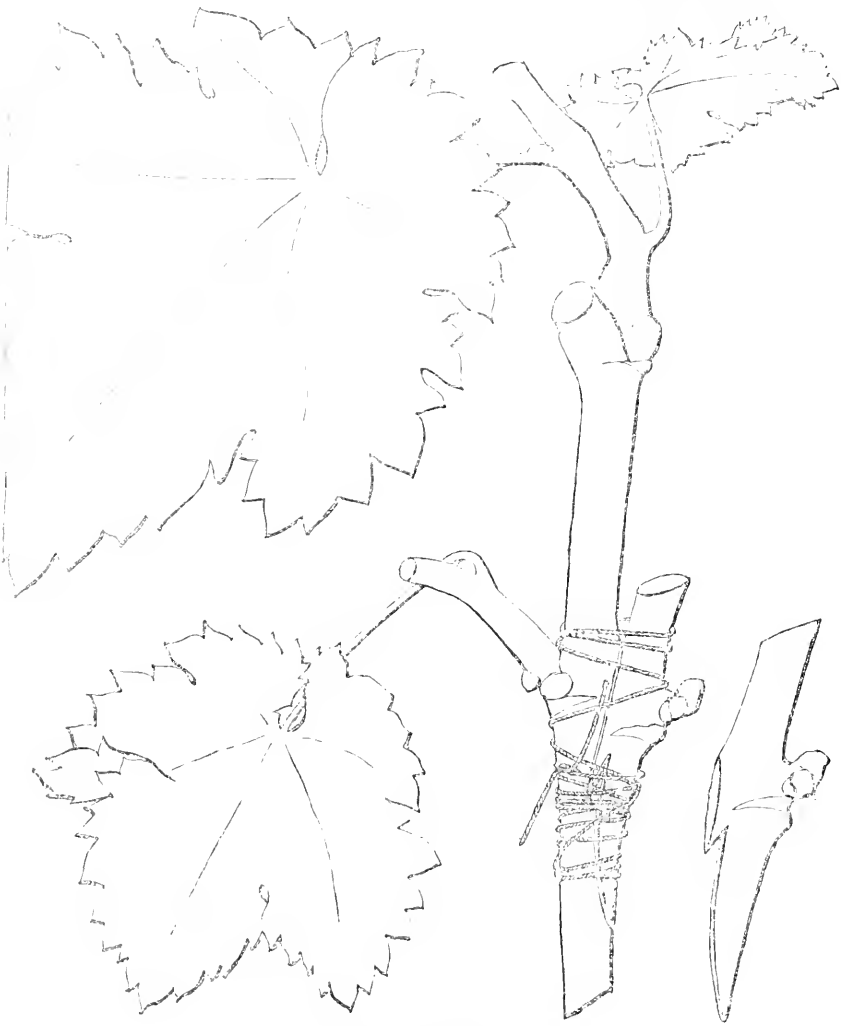


Fig. 5.—VINE GRAFT.

figure—common whip-grafting. It does not matter how large the stem of the Vine may be, for the graft being prepared, a corresponding portion of the stem is made bare, the requirement being to make as much *inner bark* fit to *inner bark* as possible, the outer edges of the bark being entirely disregarded. The scion being affixed, should be tied on tightly with matting, and covered up with some mastic

or grafting-wax. Mastic L'Homme Lefort is the best material I have ever used. Clay and moss are objectionable for this reason, that there being much moisture in the house, the graft, instead of forming an organic union, emits roots into the clay, &c., and so never unites with the stock. In about ten or twelve days after grafting, if the operation has been successful, the bud will have grown somewhat. The shoots left on the stock beyond the graft should now be checked and kept in subjection to the graft: and in about a month's time the matting and wax should be removed, and the shoot treated as established.

Vines grafted in this manner on strong stocks will grow 30 ft. or 40 ft. the first season, and produce the strongest possible wood; and Vines of any size or of any age, if in a healthy condition, may be so operated upon. It is a capital plan of introducing a new variety into an established house.—A. F. Barron, *Chiswick.*

RIVINA HUMILIS.

MOST people are in the habit of growing the above pretty plant in small pots, which certainly answers very well for decorative purposes, because it can be readily moved about to where it is wanted; but planted out where it will have a good light position, and trained up a wall, or what is better, up a pillar, if such there be, in a stove or intermediate house, it will develop itself into one of the handsomest plants that one ever put eyes upon. There is a profusion of its bunches or racemes of rouge-coloured berries, accompanied with its tiny white flowers, on the same branch with the fruit, that gives it a peculiarly interesting appearance, and this, too, for the greater part of the year. The plant is a sub-shrubby evergreen, and will thrive in a light, loamy soil, mixed with a small portion of peat and charcoal. It requires plenty of water when young, and weak manure-water occasionally; the temperature of the ordinary stove will suit it well. If it has a fault, it is that the berries soon drop when the branches are cut for room and vase decoration; but in the plant itself this appears to me to be a wise provision of nature, for were such not to be the case, the plant must soon exhaust itself, on account of its flowers and fruit being produced successively in such wonderful profusion.—T. Record, *Gardener to J. Whatman, Esq., M.P., Vinters Park, Maidstone.*

THE GOOSEBERRY CATERPILLAR.

FEW gardeners are altogether exempt from the visits of this scourge. What makes it so very formidable is its voracious appetite; for if allowed to have its own way, it will strip the bushes of every leaf in the course of a week or so. No time for its appearance can be exactly specified, but it usually comes about the beginning of May, much, however, depending on the state of the weather, so that we must be constantly on the watch. I have heard it asserted, and frequently repeated, that it is the product of thunder and rain, a Huxleyism which affirms that life proceeds from that which has no life.

Certainly these creatures do appear somewhat suddenly, for in the course of eight or ten days after the female has deposited her eggs, the young brood shows itself, and at once begins the attack, when, if allowed to rest unmolested, it will clear the bushes of every leaf. The next phase of its existence is, that the caterpillars descend into the earth, where in the course of three weeks they complete their transformation, and then make a second attack—repeating the same course till about October, after which they remain underground till the following spring.

Although hand-picking has been recommended as a remedy, it is mere waste of time, as from the minuteness of the young grubs they escape observation. For several years we had no end of trouble with these pests, several ineffectual attempts being made to destroy them, but in every case we suffered defeat, till I had the bushes thoroughly washed several times with a powerful garden-engine, and the grubs killed. During winter I had the surface soil removed to a distance of about two feet beyond the trees, and the place filled with fresh soil, and now, for many years past, they have entirely disappeared.—ALEXANDER CRAMB, *Tortworth.*

SOLANUM CAPSICASTRUM.

APRIL is a good time to begin preparing for another season with any plants of these that are getting over. Let water be kept from them for a short time; they should then be cut in pretty closely and put into a gentle heat, and if a little bottom-heat can be given at the same time, so much the better. Under these conditions, with daily syringing, they will soon show signs of breaking. When the shoots are about half an inch long, let them be taken to the potting bench, and nearly all the old soil picked from the roots, cutting in some of the longest roots at the same time. If the plants are from seed of the previous year, 6-in. or 7-in. pots will be large enough, besides being convenient sizes for table decoration; let them be well drained. The compost should be rich, as they are intended to grow and stand all the following winter. They grow well in turfy loam and leaf-mould, with some old cow-dung, and if to be got, a little bone-meal. After potting let them be put into their old quarters for a short time, shading from bright sun, and syringing at least twice daily, but keeping the soil in the pots rather dry until the roots begin to work. When fairly started to grow, if any of the shoots are growing away stronger than the rest, the points must be pinched out; this will help to throw the strength into the weaker ones. Gradually harden them off, so that by the time all the bedding plants are out of the frames, they may be plunged in them; or a sheltered place in the open garden will do equally as well, only when in frames they are more easily attended to with water. There ought to be something below the pots rather rough to let water pass freely away. In dry weather let them get daily syringings, and after the pots are full of roots, frequent manure-waterings. The foliage and general health of the plants grown in this way will be better than of those grown in heat; the berries will also set much better. We have counted

about three hundred berries on plants in 7-inch pots, the plants not being over two feet high and eighteen inches through. Some plant them out altogether, but when they are plunged there is no check from lifting them in the autumn.—A. H., *Thoresby*.

STRAWBERRY-CULTURE UNDER GLASS.

LAST month I paid a visit to the Fruit Garden of Mr. John Westcott, at Topsham, who has for some years been noted for his great success in Strawberry-culture under glass. Certainly, taking it in all its bearings, his far surpasses all the Strawberry-culture I had previously seen. Mr. Westcott's glass erections devoted to this purpose are long, narrow, low houses and pits heated with hot-water pipes, and these are filled with rows of strawberries on shelves and curbs from end to end. Asparagus is forced in the narrow pit under the front wall.

This success in early Strawberry-culture no doubt depends much on strict personal attention throughout the season, so as to study and assist nature ; but the main points seem to be—(1) The selection of the plants, and potting them early, so as to get them strong and sturdy by early autumn. The plants are never rank-growing, with large foliage, and long leaf-stalks ; but they are smallish stubby plants, with small foliage, and very short leaf-stalks. (2) The avoiding of over-potting. The thousands of plants grown by Mr. Westcott are in what we used to call 48's and small 32's, measuring from 4 in. to 5½ in. both in height and diameter. (3) The plants are taken care of through the rains of autumn and in dull foggy weather, and are not allowed to be washed and soddened into a root-decaying condition by winter ; but they are sturdy little short-foliaged plants, with their central bud and heart prominent, and as large as the end of a blackbird's or pigeon's egg. (4) When put to work they are at first treated with considerable patience, being allowed plenty of time, so as to induce the buds or crowns to burst out vigorously into numerous bunches of blossom-buds, each pot being like a nosegay thrust upright about the foliage, they are brought into blossom so evenly. (5) Each batch is fertilised with great care, so that the fruit start into growth together, and this ensures a fruit swelling away from every blossom ; the floor, indeed, becomes covered with the cast-off blossoms, like to a cherry orchard after a fine sunny breezy day late in April.

After the flowers are thus fertilised, and set, there is no loss of time, but (6) they are feasted and fed, so that the fruits swell off in the most marvellous way, and hang down all round the pots in the most tempting profusion. But little thinning, tying, propping, or staking takes place, since all are assisted to swell off, and soon become fit for the market, a point which Mr. Westcott is well up in (as he is in the swelling of such an immense heavy crop of large, finely-coloured, finely-flavoured, firm fruit), so that there is no difficulty in packing and conveying them to the London, Bath, Taunton, Exeter, and other markets.

The varieties which Mr. Westcott is forcing this season are Excelsior, and

The Claimant, both bearing large, handsome, well-shaped, finely-coloured fruit. The crop certainly far surpassed all I had previously witnessed.—JAMES BARNES, *Exmouth.*

LITHOSPERMUM FRUTICOSUM.

THE hardy herbaceous or so-called shrubby *Lithospermum fruticosum* is a plant possessing such a neat recumbent habit, and is, moreover, so constant an evergreen, and bears its minute blooms, of so rich and rare a cœrulean tint, so abundantly and at so many seasons, that I do not hesitate to recommend it strongly, as a rock or edging plant, to all who delight in plants for their simple grace, rather than for a gaudy display of bloom. Yet an edging of even this pretty plant some yards in length could not fail to afford a picture which would delight the eyes of a true artist. It is, however, as a rock-plant that it is likely to be most sought after, as it possesses all the most desirable attributes for such a position.—WILLIAM EARLEY, *Valentines.*

SUCCESSIONAL CAMELLIAS IN COOL HOUSES.

THE very suggestive hints put forth by Mr. Fish at p. 83 will be found exceedingly useful to all who have heat at command. Doubtless, however, there are many to whom a long succession of Camellias would be a desideratum, who have only a cool greenhouse, requiring only sufficient heat to keep out frost, and these may find in some of the old sorts ample gratification, and a long season of bloom. Some of these sorts may not possess that symmetry of shape which is the *beau idéal* of modern florists, but they are vigorous in growth, have hardy constitutions, and are most profuse bloomers. The most economical mode of culture, and the one which interferes least with the room required by the other plants, is to form some good borders at the back, and plant the Camellias out therein, and train them up the back wall on a trellis. These borders should be well drained, because Camellias require a great abundance of water, which, however, must percolate away freely without stagnating in the soil. The compost may be formed of very fibry turfy loam and fibry peat, very roughly chopped up. In such a soil as this the roots will revel, and the produce of flowers will be infinitely greater than can be obtained from pot-culture, besides occupying so much less of the space than would be required by large plants in pots. I write from experience in this matter, as from trees so treated, and most of which have been in their present positions upwards of twenty-five years, we annually gather from two thousand to three thousand blooms, besides having double that number through the season to keep up the show. It would not injure them to cut every one; on the contrary, with well-established trees I consider it highly beneficial, and as contributing to a free development of successional bloom.

Our season extends from about the middle of November to the third week in April. We commence with the *Old Double Striped*, which after a week or two

is followed up by the *Old Double White* and *Lady Hume's Blush*, and these again by *Pomponia* and *Pæoniflora*. By the middle of February, *Wellsiana* and *Triumphans* begin to come in, succeeded by *Elegans* early in March, while by the end of March we have *Reticulata* in fine bloom, and *Eximia* and *Welbankiana* just coming on. The latter I consider one of the most useful late Camellias for cut flowers that we possess. These are all grown under precisely the same conditions, and have no more fire-heat than is necessary to keep out frost. The borders are surface-dressed once a year, and during the growing season well-established trees will require liberal applications of liquid manure and abundance of water, with copious syringings when the bloom is past.—JOHN COX, *Redleaf*.

CAMPANULA ANDREWSII *alias* LACINIATA.

THIS is a very interesting and beautiful plant, and one of the most distinct of the well-known and extensive family of Bellworts. It was discovered by Tournefort in 1700, and was introduced to this country in 1788 by Andrews, who named it *Campanula laciniata*, but as it was not the plant so called by Linnæus, this name lapsed, and De Candolle substituted that of *Campanula Andrewsii*. The plant was subsequently lost to cultivation, and has only recently been reintroduced from Greece by, I think, M. Orphanides.

Being a native of the warm shores of the Mediterranean, it is not hardy in this country except in favourable situations; but in such places it forms one of the most charming perennials in cultivation. It has stood out here, in the open ground, for the past two winters, yet as I have seen plants in cold, damp situations killed by the frost, I think it cannot be called strictly hardy. This plant is certainly one of the prettiest of the *Campanulas*. It grows about two feet in height, throwing up a thick stem, branching from the base. The radical leaves are about eight inches in length, and from two to two and a half inches in width, deeply laciniated, and not unlike those of the common Jacobæa. They are of bright glossy green colour, and the numerous white veins give them a prettily reticulated appearance. When in blossom it forms an elegant pyramidal bush, covered with large blue flowers. It is a plant of very simple cultivation, and one I would recommend everyone to try who appreciates choice border flowers.—A. I. PERRY, *Tottenham*.

RAISING SEEDLING GOOSEBERRIES.

SOME four or five years ago I found an immense quantity of small seedling Gooseberries growing on some asparagus beds. I was indebted for sowing the seeds to my winged enemies, the blackbirds and thrushes, for on being disturbed in their raids on the fruit, they generally made these beds their sheltering-places. Having selected about 1,000 of the strongest plants for growing in rows till they fruited, I was able in the past year to select a few varieties which I believe will be acquisitions for flavour, even to the best collections of the older sorts. When better grown than in the seedling rows, they will

be duly submitted for the Fruit Committee of the Royal Horticultural Society to test their merits. I have specially selected these :—

1. Like the Warrington in colour and keeping qualities, but larger, and better flavoured.

2. Apparently a seedling of the Red Champagne, but very much larger, and of excellent flavour.

3. Like the Whitesmith in colour and size, and of exquisite flavour.

4. A seedling off the Early Sulphur Yellow, of the same early habit in ripening, but much larger in size than that old variety.

5. A rough red, very early in ripening, larger in size than the old Rough Scotch Red, a well-known sort for making jam and other preserves.

6. A green early variety, better in flavour and larger in size than the old Green Gascoigne.

Very few new varieties of seedling dessert gooseberries have lately been advertised by nurserymen for sale. The principal run has been on raising the larger sorts for prize-taking at the shows. I think, however, that the raising of new dessert varieties should not be neglected, for this delicious and wholesome fruit is a favourite with all classes.—WILLIAM TILLERY, *Welbeck*.

GESNERA ELONGATA.

THIS *Gesnera*, which, though introduced in 1835, is now seldom met with, is one of our best winter-blooming stove plants, and a beautiful object for cut-flower vases, the blossoms hanging gracefully over the sides in a similar way to those of the Fuchsia. It is of a bright orange-red colour when fully open, but the bud is deeper in colour, and has a velvety appearance. It is a continuous bloomer from the end of October until March, and is, moreover, a plant of easy culture, deserving a place in every collection. It is not tuberous-rooted like some of the *Gesneras*, but forms a handsome bush-like plant if a little care is given to it. To begin with a young plant: about the end of February it should be cut down, leaving two or three inches of the previous year's wood ; it must be kept rather short of water at the root until growth recommences, though the syringe may be used freely morning and evening. As soon as the young growth is an inch or so long, the plant should have a shift into a pot one size larger than the one it is taken from, using fibry peat with just a dash of pulverised loam and silver-sand, the peat to be broken up rather coarsely, and the whole well mixed. Keep the plant in an ordinary stove temperature, near the glass, in as light a situation as possible, and never use shading, but syringe morning and afternoon. As the young growth requires it, stake and tie out the plant. Let plenty of drainage be used in potting, and water plentifully during the growing season, as the fine hair-like young roots are soon destroyed if allowed to become too dry, and the growth of the plant is thereby much weakened. By the beginning of October, flower-buds will make their appearance, and the plant will continue to

W. H Fitch lith.

J. N Fitch imp

Quercus laurifolia.

bloom throughout the period above stated. When blooming is over, withhold water for a few days, and then cut the plant back as above recommended; water sparingly until growth recommences: re-pot as soon as the young shoots are an inch or so in length, and treat in every respect as before directed. Cuttings made from the tops which are cut off in pruning strike freely in bottom-heat, and form useful plants for decorative purposes in one season.—H. CHILMAN, *Somerley.*

QUERCUS LAURIFOLIA.

WITH AN ILLUSTRATION.

THE Laurel-leaved Oak, of which we now give an illustration, from twigs taken from a fine specimen in the grounds of Mr. Webb, of Milford, Surrey, is one of many neglected trees; and we publish this note respecting it, in the hope of inducing planters of ornamental trees to make acquaintance with it. It belongs to the section *Phellos*, or the Willow Oaks, and is a native of South Carolina and Georgia, whence it was introduced in 1786. It is a deciduous tree, growing 50 ft. high or upwards, and has elliptic obovate entire leaves, 8 in. or 9 in. long, and which take on a bright rust-colour before they fall in the autumn. The acorns, as will be seen from our figure, are not matured till the second year, a fact to which our attention was called by Mr. Young, of the Milford Nursery, to whom also we are indebted for the specimens. As a handsome and distinct ornamental tree, this Oak deserves to be much better known. The tree in Mr. Webb's ground is of large size and considerable age.—T. MOORE.

WORK FOR INTERNATIONAL FRUIT SHOWS.

AS great International shows are now the order of the day, I think something good and practical might be done in the way of giving us a better knowledge and insight into which are really the best varieties of our most popular hardy fruits, and the districts for which they are most suitable. Let me take, for instance, the Apple and Pear. What a cloud of doubt hangs over these! We know there are a few sorts that do well almost everywhere, but again there are hundreds of sorts which we young gardeners and amateurs plant in a blindfold sort of way, expecting all will come right, and then, after years of pruning and training we learn in too many cases that all is wrong; and the trees have either to be rooted out, or grafted with another sort.

To remedy this defect I beg to suggest to those high in office in the Royal Horticultural Society, and in the other great leading societies, that prizes should be offered at, say a November show, for the best collections of Apples and Pears, grown respectively in the Southern, the Midland, and the Northern counties, in Wales, Scotland, and Ireland. This, I believe, would bring together a splendid, as well as most instructive, exhibition of those fruits; and one, too, that would draw together a large number of horticulturists and pomologists who are deeply inter-

ested in this subject. I throw out the above hints in the hope that some one more able than myself will take up the question, as it is well worth discussion; and that the new Council of the Royal Horticultural Society, when it gets fairly into harness, may in its wisdom see fit to move in the matter.—J. McINDOE, *Bishopthorpe Palace Garden, York.*

*** The collections which Mr. McIndoe suggests should be got together in this way, would prove most instructive, no doubt. So, too, would the exhibition of a series of examples of the same variety of fruit from widely separated localities, differing in soil and climate, the exhibits being in this case accompanied by condensed geological and meteorological observations. Supposing some half-dozen or dozen varieties of repute were thus got together annually, the *élite* of our fruit lists would soon be worked off.—ED.

THE CARROT GRUB.

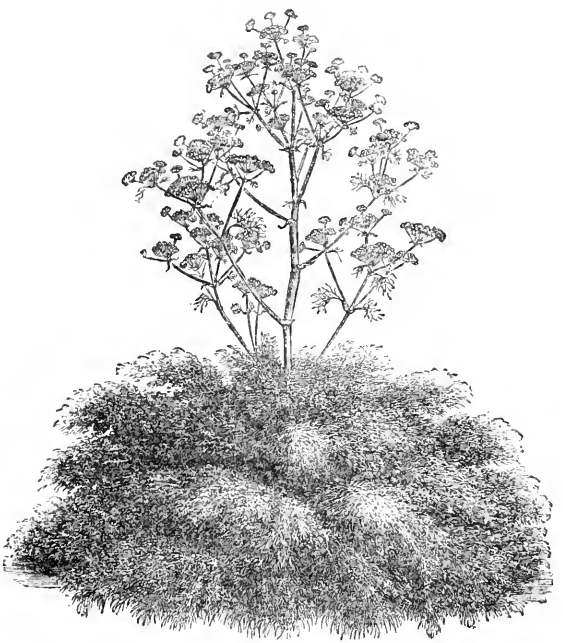
I BEGIN this paper with a quotation from Duff, the gardener poet:—

"The smallest midge that mounts the air,
Can breed a gardener toil and care."

and it is so with the carrot-fly, *Psila rosæ*, whose larvæ will sometimes destroy a whole crop. I am not acquainted with the habits of the insect, nor exactly with those of its larva. Loudon mentions that "the most approved remedies against the larvæ, are thick sowing, in order to afford supply both for the insect and the crop; and late sowing, especially in light soil, thus permitting the grubs to attain their fly state before the seed comes up." The first part of this advice seems good enough, but at first sight not the other, because the Carrots are "worm-eaten" during their summer's growth—at least, I have found live maggots in them in August, but have doubts if there be more than one grub in each diseased Carrot. Then again, supposing the pupæ to be developed or the insects bred in the early part of the season, as Loudon has it, the flies, according to the common rule of "insect life," would lay their eggs on the late-sown crops, and thus renew the plague. But happily that is not so; the pupæ, like those of many of their race, seem to lie in the ground in winter, and attain the fly state in spring in time to lay their eggs on the early crops. Unhappily the injury effected by the larvæ is not perceived before the tops of the young carrots become rusty or brown; and by this time the maggots have got too firm hold of them, for any remedy to be of much use. Some, however, recommend dressing the affected crops with lime, soot, salt, and soap-suds; and a mixture of spirits of tar with sand, saturated, and applied to the soil "before digging, at the rate of about one gallon to sixty square yards," has also been suggested; but such remedies cannot touch the grubs without injuring the crops. The same applies also to the pupæ, but with still more force, because they are encased in tougher skins.

The best remedy seems to be deep trenching, in order to bury the pupæ deeper in the ground than their usual winter quarters; likewise to sow on fresh ground apart from where diseased carrots have grown the previous season; and for a

general crop to sow as late as possible. In 1871 I had sound carrots which were not sown until the middle of August, and the greater part of them were in the ground till spring. Last season my general and best crop of carrots was sown about the first of July. Perhaps in both cases the "life-time" of the carrot-fly was past before the seed came up, and thus the crops were saved. I adopted late sowing in consequence of observing that the grubs did not attack the young carrots which filled up the blanks of the diseased crops. I have either read or have been told that good Carrots cannot be grown in some parts, especially in Forfarshire, owing to the ravages of the grub; perhaps if late sowing were adopted, the case may be otherwise.—J. Wighton, *Cossey Park.*



FERULAS AS DECORATIVE HARDY PLANTS.

FEW of the *Ferulas* are as yet familiar in gardens, and yet for leaf-beauty they are probably unsurpassed by any hardy plants. They form deeply-penetrating, fleshy roots, and hence thrive better on light or deep, than on close heavy soils, and by mid-winter they begin in many cases to push up their young leaves, which keep growing on, unheeding the weather, till by about March or April they form grand tufts of foliage four or five feet through, and excessively compound, being made up of an almost endless number of small leaflets, which are either thread-like, or narrow lance-shaped, or lozenge-shaped in the species most frequently seen, namely, *F. tingitana*, *F. glauca*, *F. Ferulago*, and *F. communis*, of which latter we introduce a woodcut from Mr. Hemsley's

book recently noticed, for which we are indebted to Messrs. Longmans. The *Ferulas* are called Giant Fennels, but they have little or no smell of fennel. These plants belong to the *Umbelliferæ*, and produce tall, branching stems, with large and very showy umbels of yellow flowers, the stately stem and abundant flowering branches making them really ornamental. *F. communis* is one of the species with the leaves cut up into long narrow, almost thread-like segments, which are of a deep and glossy green. Its compound inflorescence is rather set down among the leaves, than elevated above them, in which respect it most nearly coincides with *F. Ferulago*, in which the same habit is observable. *F. glauca* and *F. tingitana* have somewhat taller stems, so that their inflorescence stands up clear of the leaves, and thus has a still more noble appearance. In the latter of these, the glittering leaflets are lozenge-shaped; in *F. glauca* they are linear-lanceolate. It is for the mass of foliage in spring, and the noble inflorescence in summer, that these plants should be grown. Towards the close of the summer the leaves die off and the seeds ripen, when the stems may be cut away, and the whole plant retires to rest for a few months.—T. MOORE.

THE TULIP: ITS PROPERTIES AND IMPROVEMENT.

UNLIKE the Auricula, this flower holds its position and rank as a Florists' flower, for although many old growers and fanciers of the Tulip have within the last thirty years died out, yet I believe that we have now in England as many growers as have ever been known at any previous period. Such being the case, we may fairly consider the Tulip to be one of the most popular of Florists' flowers at the present day; and it is deservedly so on account of the wonderful improvements that have been made as to its qualities, even within the last twenty years. Forty or even thirty years back, we had but few English-raised Tulips of any note. Seedling raising was here out of the question, and was left entirely in the hands of foreigners, chiefly the Dutch, from whom we had to import flowers at a great price. Since, however, the raising of seedlings has become so common in this country, we have outstripped the Dutch, both as regards quantity and quality of flowers—so much so, that now we very rarely see any of the original Dutch flowers on our exhibition tables. With but few exceptions, we can now lay claim to having the lead as raisers of choice and improved show Tulips; indeed, I am of opinion that by perseverance in impregnation, and by taking care in making choice of our finest new varieties for seed-bearers, we shall in a very few years be able to dispense with four-fifths of the old favourites, and to replace them with flowers of higher quality.

A few years ago, at the time when *Harrison's Cabinet*, the *Midland Florist*, &c., were in vogue, we had several writers on the Tulip, one striving against another as to who should be regarded as the highest authority, and who should furnish the standard by which judges at exhibitions were to be guided as to the merits of novelties. We had then four would-be authorities, all differing as to what should constitute the proper model; but I venture to say that we now have

flowers that surpass in real merit the best of the models at that time set up. It was held that the possession of certain properties constituted a good flower, viz.:—1, shape; 2, substance; 3, purity of base; 4, marking; 5, bold seed-pod, and stout stamens with large black anthers. I think that one more property might now be added as a finish for a perfect flower, namely, that the ground-colour, whether white or yellow, should be clear—as near snowy-white as possible in the former case, and of a pure glossy lemon or orange, free from the least shade of red in or outside the petals, in those having yellow grounds. What can be a greater drawback to a stand than a Rose or a Byblœmen with a muddy creamy-white ground, or a cloudy dull straw-coloured Bizarre, even if the flowers are perfection in all their other properties. It is likely enough that there are those who will say there has been plenty said and written about Tulips before now; but what little I have to say respecting them, may be somewhat interesting to a few of the less knowing ones, and may serve as a reminder to those who profess to know all that can be known, so far as the growth and properties of the Tulip are concerned.

There is one other matter I will just mention, viz., the division of the Bizarre class, though it is not exactly a new or fresh project of my own, for it was mooted by certain other growers some few years since. It was, however, at that time objected to, the principal objection being that there was not then a sufficient quantity of sorts to admit of such a division being advantageously made. Now, however, I think that objection and difficulty has been overcome, for within the last few years we have got some good additions, both among what are termed Red and Dark Bizarres, more particularly among the Red ones, which, in my opinion, quite equal, and in some instances surpass, the Dark ones in real merit. Such being the case, and as we can now count upon almost any quantity of Red Bizarres as well as Dark Bizarres, I cannot see why we should not divide them, and have two classes amongst the yellow-ground flowers, as well as amongst those with white grounds. There is as much difference between a bright Red feathered or flamed Bizarre and the Dark ones, as between the Rose and Byblœmen classes. Some may object that there would be a difficulty in distinguishing correctly the Reds from the Darks, since many sorts, properly speaking, are neither Darks nor Reds, but Browns or go-betweens; but then the same might be said of the Byblœmen and Rose classes, for we have plenty of sorts, and fine sorts, too, which we may also term go-betweens,—neither Roses nor Byblœmens, strictly speaking. Therefore, I think the argument in favour of the one is as good and as plausible as that in favour of the other.

I had thought about giving my individual opinion upon what I consider ought to be regarded as the real points of merit and demerit in judging the Tulip, and what should be the properties constituting a first-class show flower. Certainly we have had a code of these properties laid down, which was good enough at the time it was propounded; but as time rolls on we see changes, and we either see or fancy we see room for improvement in our floral hobbies, as well as in many other things. Therefore, all being well, I will on another occasion

try to define what I think are the essential properties constituting a model flower fit for exhibition; and endeavour to lay down a proper system for judges to work upon—[Please do].—JOHN HEPWORTH, *Huddersfield.*

NOTABLE NEW PLANTS AND FLOWERS.

[F.C.C. = First-class Certificate; S.C.C. = Second-class Certificate; B.C. = Botanical Certificate; F.C. = Floricultural Certificate.]

AGAVE BAXTERI [F.C.C.].—A very handsome greenhouse succulent, with leaves a foot long, tapering off into a long terminal spine, the margins armed with short spines set an inch apart.—*Mr. J. T. Peacock: R.H.S., March* 5.

AGAVE KERCHOVEI [F.C.C.].—A fine greenhouse succulent, with narrowish tapered leaves, having variously-directed spines, 2 in. to 3 in. apart, and a brown margin.—*Mr. J. T. Peacock: R.H.S., March* 5.

AGAVE PERBELLA [F.C.C.].—A very handsome greenhouse succulent obtained from *A. xylinacantha.* The leaves are 1 ft. long, and 1½ in. wide, furnished with unequal, short, blunt, brown spines.—*Mr. W. W. Saunders, and Mr. J. T. Peacock: R.H.S., March* 5.

AMARYLLIS BEAUTY OF REIGATE [F.C.C.].—A very richly-shaded, blood-red variety, with narrowish undulated segments, not so good in shape as some recent seedlings, but specially commended for its rich colour, its dwarf growth, and its great freeness in flowering, whence it was regarded as a valuable decorative plant.—*Mr. A. J. Waterlow: R.H.S., April* 2.

ASPLENIUM LONGISSIMUM [F.C.C.].—A handsome evergreen stove fern, exceedingly well adapted for basket culture, the pinnate, black-rachised, often proliferous fronds being long, narrow, and drooping, and thickly clothed with horizontal auriculate pinnules.—*Messrs. Veitch & Sons: R.H.S., March* 5.

AUCUBA JAPONICA YOUNGII [F.C.C.].—A fine large green-leaved free-growing variety, bearing abundant bunches of large, deep, coral-red berries; distinct, and very good.—*Mr. Maurice Young: R.H.S., March* 19.

AZALEA AMŒNA SMITHIANA [F.C.C.].—Very bright cherry-rose large and showy flowers of a hose-in-hose character, and remarkably free; a very valuable dwarf early-flowering decorative shrub.—*Mr. G. Smith: R.H.S., April* 16.

CALLUNA VULGARIS CUPREA [F.C.C.].—This is a very dense dwarf-growing variety, that carries a yellowish tint on the branches during the summer, but in October changes to a bright coppery hue. If this character be maintained away from the peaty soil of Woking, it will be an invaluable winter bedding plant, as it supplies a colour of foliage much needed.—*Mr. Anthony Waterer: R.H.S., March* 19.

CAMELLIA PRINCESS ALEXANDRA [F.C.C.].—White, the base of the petals pale carmine, and flushed with the same; a very pretty and distinct variety, of fine quality.—*Messrs. E. G. Henderson & Son: R.H.S., April* 16.

CINERARIA MRS. LASCELLES [F.C.C.].—White ground, with broad, uneven margin of rosy purple; large black disc, very large pip, but somewhat coarse.—*Mr. C. Turner: R.H.S., April* 16.

CINERARIA PRINCESS CHRISTIAN [F.C.C.].—White ground, with medium edge of bright purple and rose, dark disc, smooth, and of good quality.—*Mr. C. Turner: R.H.S., April* 16.

CLEMATIS FAIR ROSAMOND [F.C.C.].—One of a very fine batch of new varieties

of the patens section; colour satiny white, very lightly tinted on the edges of the segments with rose, and having purple stamens; flowers very massive, finely formed, and eight-sepaled.—*Messrs. G. Jackman & Son: R.H.S., April* 16.

Clematis The Queen [F.C.C.].—Pale mauve-colour, the flowers large, and of very fine quality; one of the same batch as the foregoing.—*Messrs. G. Jackman & Son: R.H.S., April* 16.

Clematis Stella [F.C.C.].—Another early-blooming variety; colour pale violet, lighter towards the edges of the segments, and with a slight flame of puce along each; very fine and distinct.—*Messrs. G. Jackman & Son: R.H.S., April* 16.

Clematis Vesta [F.C.C.].—Another of the same type; flowers pure white; a fine variety, of considerable merit.—*Messrs. G. Jackman & Son: R.H.S., April* 16.

Dianthus barbatus atrosanguineus [F.C.C.].—A variety of Sweet William, the leaves of which are of a lively claret-bronze hue; it appears as if it would be useful for spring gardening.—*Mr. T. S. Ware: R.H.S., March* 26.

Epidendrum erubescens [F.C.C.].—A somewhat old but rare species, reputed to be difficult to flower; it bears a fine spike of delicate lilac blossoms, and was certificated as a remarkable and rare plant of great beauty.—*Mr. C. Leach: R.H.S., March* 19.

Ficaria grandiflora [B.C.].—A fine dwarf hardy perennial, comparable to a giant form of the lesser Celandine; it has roundish glossy leaves, and large bright yellow flowers fully two inches across.—*Mr. R. Parker: R.B.S., March* 26.

Hyacinth (S.W.) Baroness Van Tuyll [F.C.].—White, with magenta stripe down each of the narrow segments; it forms a long thick spike of fine shape, and is exquisitely fragrant.—*Messrs. Veitch & Sons: R.B.S., March* 26.

Hyacinth (S.B.) Lord Melville [F.C.C.].—Very rich, deep glossy claret-purple, the bells large, and of fine shape, and having a conspicuous clear white centre; a very distinct and fine variety.—*Messrs. W. Cutbush & Son: R.H.S., March* 19.

Hyacinth (S.W.) Mary [F.C.].—Clear white, with medium-sized bells of good shape, forming a close symmetrical spike.—*Messrs. Veitch & Sons: R.B.S., March* 26.

Hyacinth (S.B.) Massini [F.C.C.].—Pale grey-blue, the reverse of the petals azure-blue; bells very large, and forming a bold spike.—*Messrs. Veitch & Sons: R.H.S., March* 19.

Hyacinth (S.B.) Prince of Wales [F.C.C.].—Very dark purple-blue, perhaps one of the best really dark-blue Hyacinths yet seen; fine close spike.—*Mr. J. Douglas: R.H.S., March* 19.

Odontoglossum nebulosum pardinum [F.C.C.].—A charming dwarf-growing orchid, the flowers of which are blush-white, spotted with purple-brown, the sepals oblong-acuminate, the petals broader; the lip, which is also spotted, has a pair of yellow crests.—*Messrs. Veitch & Sons: R.H.S., March* 5.

Phormium tenax atropurpureum [B.C.].—A distinct variety of New Zealand Flax, having the leaves of a dark bronzy purplish hue, and useful as an ornamental greenhouse plant for contrast with subjects having pale green foliage.—*Messrs. Veitch & Sons: R.B.S., March* 26.

Primula denticulata purpurea [F.C.C.].—A large-flowered, deep-coloured Indian variety of *P. denticulata*, remarkable for its dense and compact heads of flowers; it is very suitable for the rock garden, or for cultivation in pots.—*Mr. G. F. Wilson: R.H.S., April* 2.

ROSE (H.P.) ABBÉ BRAMEREL [F.C.].—Bright rich velvety crimson, shaded with maroon-purple, of good form, size, and substance, and of vigorous habit. A very rich-looking flower.—*Mr. W. Paul: R.B.S., March* 26.

ROSE (H.P.) LYONNAISE [F.C.C.].—Clear, deep peach-pink, flushed with violet, deep globular flowers, rather wanting in substance, of a delicate soft hue, and of good vigorous habit.—*Messrs. Paul & Son, and Mr. H. J. Bennet: R.H.S., April* 2.

ROSE (TEA) MADAME CAMILLE [F.C.C.].—Creamy blush, suffused in the centre with bright salmon-buff; a fine full rose, with great depth of petal, and vigorous habit.—*Mr. W. Paul: R.H.S., April* 16.

ROSE (TEA) MADAME JULES MARGOTTIN [F.C.C.].—A charming Tea Rose, with a pale cream-coloured exterior, the centre being primrose and bright orange nankeen; it has a capital upright habit.—*Mr. J. Bennett: R.H.S., April* 2.

ROSE (H.P.) MONS. CLAUDE LEVET [F.C.C.].—Shaded red, flushed with violet; a fine full rose of great substance, and vigorous habit.—*Messrs. Paul & Son, and Mr. W. Paul: R.H.S., April* 16.

ROSE (H.P.) PRESIDENT THIERS [F.C.C.].—Rich carmine-rose, the exterior petals much reflexed, as in the case of La France, but loose and rough when fully expanded; good habit.—*Mr. J. Bennett: R.H.S., April* 2.

ROSE (H.P.) RICHARD WALLACE [F.C.C.].—A flattened globular-shaped rose, like Le Rhone, colour pale bright red, flushed with violet; good substance, and vigorous habit.—*Mr. J. Bennett: R.H.S., April* 2.

SCILLA HUGHII [B.C.].—Greatly resembling *S. peruviana*, and in fact supposed to be a major form of that species. The flowers are of a pale reddish violet, with a prominent bright blue ovary, and appear to be larger than those generally found in *S. peruviana.*—*Mr. T. S. Ware: R.B.S., March* 26.

TRICHOPILIA LEPIDA [F.C.C.].—A handsomely marked form, from Costa Rica, pale lilac-pink, margined with white, the throat lit up with orange; very fine and striking.—*Messrs. Veitch & Sons: R.H.S., April* 16.

GARDEN GOSSIP.

THE *Veitch Memorial Prizes* will, with the consent of the Council of the Royal Horticultural Society, be distributed at the forthcoming show of the Society at Bath, in June next; the subjects to be selected from amongst the objects exhibited at the show, in accordance with the Royal Horticultural Society's Prize Schedule, by *bonâ fide* gardeners of Great Britain or Ireland. In each class the prize will consist of the Veitch Memorial Medal and a prize of £5:—

A. For the most meritorious dish of Black Grapes, exhibited as above.
B. For the most meritorious dish of White Grapes (Muscats), exhibited as above.
C. For the most meritorious dish of White Grapes (not Muscats), exhibited as above.
D. For the most meritorious Specimen Orchid, in flower, exhibited as above.
E. For the most meritorious Specimen Stove Plant, in flower, exhibited as above.
F. For the most meritorious Specimen Greenhouse Plant, in flower, exhibited as above.

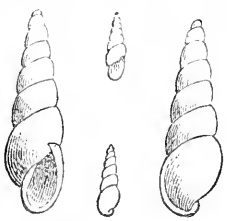
A notification of entry on the part of those who desire to compete is to be sent, not later than June 14, to the Trustees, under cover to Mr. Moore, Botanic Garden, Chelsea, London, S.W.; and it must be stated in which of the classes in the Society's or the Local Special Schedule of Prizes the exhibits will be found. The awards will be made for high-class cultivation.

—— OF *Great Exhibitions* during the present season, we may note the following:—(1) An International Horticultural Exhibition, to be held at the Alexandra Palace, on May 24 and five following days, on the occasion of the

Palace being opened to the public; the schedule of prizes extends to 88 classes. (2) International Fruit, Flower, and Vegetable Exhibition, promoted by the Manchester Botanical and Horticultural Society, to be opened on September 3; £1,500 has been raised as subscriptions, and further contributions are invited; the schedule of prizes extends to 155 classes.

—— The following are some of the highest prices fetched by single specimens at the *Manley Hall Sale of Plants*:—Oncidium concolor, 18*gs.*; O. splendidum, 43*l.*; Vanda teres, 20*l.*; V. Lowii, 17*gs.*; V. insignis (true), 14*gs.*; Aërides Schröderii, 21½*gs.*; A. Veitchii, 19*gs.*; A. nobile, 11*gs.*; A. Veitchii, 23*gs.*; A. Schröderii, 23*gs.*; A. Fieldingii, 19*gs.*; A. Williamsii, 11*gs.*; A. Dayanum, 16*gs.*; A. affine superbum, 17½*gs.*; Anguloa Clowesii, 16*gs.*; Cypripedium Dayanum, 17*l.*; Sophronites grandiflora, 13*gs.*; Cymbidium eburneum, 57*gs.*; Masdevallia Lindenii, 39*l.*; Lycaste Skinneri alba, 16*l.*; Coelogyne cristata, 16*l.* and 18*l.*; Saccolabium ampullaceum, 22*l.*; Cymbidium Mastersii, 12*gs.*; Cypripedium hirsutissimum, 12*gs.*; Dendrobium Schröderii, 13*gs.*; D. Wardianum, 28*gs.*; D. Devonianum, 12*gs.*; D. McCarthiæ, 12*l.*; D. Hookerianum (chrysotis), 12*l.*; Pleione lagenaria, 10*gs.*; Cattleya exoniensis, 26*gs.* The magnificent specimen of Cocos Weddelliana brought 60*l.*; a smaller specimen fetching 42*gs.*; while the unique plant of Geonoma (Martii) Seemannii lately figured by us was knocked down at 31*gs.* A plant of the extremely rare Nepenthes sanguinea was sold for 50*l.*, being bought by its introducers, Messrs. Veitch and Sons.

—— A mischievous little W.-Indian mollusc, called *Bulimus Goodallii*, is occasionally found in gardens. It was first discovered in Pine beds at Bristol, and has been found in similar situations, or in hothouses about London, Manchester, Norwich, and Bury St. Edmund's. The plan adopted to catch them was to place damp boards on the surface of the warm tan and around the sides of the frames, and then after a few hours the Bulimus would be found sticking to the under-surface. If wanted for conchologists, they should be carefully brushed off on to a sheet of paper, and then transferred to a cup of boiling water, from which they may afterwards be strained, and dried quickly on a cloth or a piece of blotting-paper; but if the object be merely to destroy them as "vermin," they can be swept into a shallow pan of strong brine composed of a handful of common salt to about a pint of cold water. The smaller figures, from the *Gardeners' Chronicle*, represent the young; the larger ones are about twice the natural size.



Bulimus Goodallii.

Obituary.

—— Dr. Torrey, the veteran American Botanist, died of pneumonia at New York, on March 10. He was a most distinguished naturalist, and one of the most estimable of men. So long since as 1818 he published a catalogue of plants growing in the vicinity of that city; and he was one of the authors of the *Flora of North America*. His name and his botanical labours are commemorated in the genus Torreya, which was named in compliment to him by Dr. Walker Arnott.

—— Mr. Charles J. Perry died on April 11, in his 51st year, at the Cedars, Castle Bromwich, Birmingham. He had been for 35 years an ardent cultivator of florists' flowers, and for a considerable portion of that time took an active part as an exhibitor, judge, and successful hybridiser. As a cultivator and exhibitor of Dahlias and Roses, and a raiser of seedling Verbenas, Mr. Perry was well known. He was not only a good grower, but a good judge, and will be missed from many an exhibition.

—— Mr. W. Bridgewater Page died at Southampton, on April 18. He was the only son of the late eminent nurseryman of that name, and was engaged in the seed trade.

—— M. Max Nisson died at Naples, on February 21, aged 54. M. Nisson was a great amateur of plants, and was a constant attendant at the International Horticultural Congresses.

—— Mr. W. Dowell died on February 23, aged 76. He was, for nearly

half a century, gardener at Grendon Hall, Warwickshire, the seat of Sir G. Chetwynd, Bart.; and served as gardener not only the present Baronet, but his father and grandfather. He was much esteemed by his employers, as well as by the profession generally.

GARDEN WORK FOR MAY.

FLOWERS.

THE great business of the month is the planting of the flower-garden. The time of doing so depends upon the weather. After the 20th is generally considered safe, though we occasionally have frosts up to the end of the month, and indeed all through the summer, so if we wait till the last sweep of the cold is surely past, we might not plant at all. By beginning with the hardiest plants, such as *Verbenas*, *Calceolarias*, and well-seasoned *Scarlet* and other *Pelargoniums*, we may generally proceed to plant with tolerable safety after the middle of May; *Variegated Pelargoniums*, *Ageratums*, *Alternantheras*, *Perillas*, *Fuchsias*, *Succulents*, &c., may follow, winding up with *Dahlias* and *Subtropical plants*, as *Solanums*, &c., which latter are, as a rule, better under glass till June. All such things should, moreover, be strong before they are planted out: and to succeed well, most of them require a sheltered position. *Cannas* and *India-Rubber plants* bear rough exposed treatment better than most others, and are among the most useful.

The arranging of flower-garden plants has become a hackneyed subject, and it can hardly be necessary to repeat the old canons about harmony and contrast —orange and blue, red and white, yellow and purple; on the contrary, I would rather advise everyone to please himself, and the chances are he will also please others: and if not, ladies and gentlemen mostly have gardens for their own gratification, and are quite as much entitled to fill them as they list, as to furnish their houses or carpet their rooms to their own taste. Moreover, I plead for gardens of all colours, and all modes of furnishing, assured of this, that the richest effects are mostly the results of chance, or of the merest eccentricities of genius. Careful planting is one of the best receipts for rapid covering. Settle the plants in their warm genial beds with a soaking of water at a temperature of 80°, and run a hoe over the surface in a few hours afterwards, to keep the heat in; or, better still, cover the surface immediately with a thin layer of cocoa-fibre refuse. Some also give each plant a trowelful or more of compost or manure at planting, to set it off in its new sphere—a capital plan. Finally, plant thickly, almost sufficiently so to cover the ground at once, if it can be done; it is pleasanter to prune and thin, than to wait for the plants to cover. Keep the herbaceous border or garden neat and clean. Plant out tender and hardy annuals and perennials; also rooted runners of *Violets*, young plants of *Arabis*, *Aubrietias*, *Forget-me-nots*, *Polyanthuses*, *Pansies*, *Daisies*, *Pyrethrums*, *Pentstemons*, *Phloxes*, &c., and propagate *Double Wallflowers* and *Stocks*.

IN-DOORS.—Keep cool and shady in the conservatory, which will now be a blaze of *Azaleas* and other choice plants. If *Pelargoniums* and *Fuchsias* must be in the same house, they should be kept by themselves as much as possible, receiving little or no shade till the blossoms open; but when in bloom the shading is needful to preserve them. The later batches may still be shifted, as may late plants of *Zonal* and *Variegated Pelargoniums*. Train *Fuchsias*, *Pelargoniums*, and other plants; also climbers on the roof, and prevent the latter from getting entangled; pendent training, that is, long shoots hanging free of each other, is generally the most effective. Stove Plants and Orchids will soon

be in full growth; a moist atmosphere, early closing, and careful shading are the chief secrets of successful culture. Shift on *Caladiums*, *Clerodendrons*, *Gesneras*, *Gloxinias*, *Achimenes*, *Begonias*, &c., for stock and furnishing; also any specimen plant that may require it. Water copiously with water at 80°.

Pits and Frames emptied of flower-garden plants will now be filled with *Chinese Primroses*, *Cinerarias*, *Humeas*, *Linums*, autumn-flowering *Zonal* and other *Pelargoniums* and *Fuchsias;* and the warmer divisions with winter-flowering stove plants, such as *Euphorbia jacquiniæflora*, *Poinsettias*, *Begonias*, and many others; with late batches of *Achimenes*, *Gloxinias*, *Lilies*, *Cockscombs*, *Balsams*, *Celosias*, *Amaranthus tricolor* and *salicifolius*, and others which are useful in pots; also seedling *Pansies*, *Auriculas*, &c. In fact, pits and frames are about the most useful structures we have. Hardly has one family or set been nursed out of them, than it is followed by another, and so on throughout the season.—D. T. Fish, *Hardwicke.*

FRUITS.

In-Doors.—*Pine-apples:* Pay every attention to the summer fruit now swelling. If not already done, remove from the plants all suckers not wanted for stock; water well when required, and occasionally with liquid manure; all the heavy fruit should be supported by stakes, otherwise they will lean downwards, and the crowns will grow crooked; watch the bottom-heat, and keep it about 85°. The whole of the plants intended for fruiting next winter should now be shifted into their fruiting pots; see they have a regular bottom-heat of about 85°, and in fresh plunging them avoid crowding them. Most of the young stock shifted in March will now require another shift; these too should be set thinly apart and not crowded, that they may grow strong and stiff.—*Vines:* In all houses where grapes are approaching maturity air should be given freely during the day, and a little by night; keep up a moderate fire-heat, which will enable you to give more air than could otherwise be safely done. In succession houses follow out previous directions; always attend to the thinning of the berries as soon as possible after they are set. In late houses the thinning, stopping, and tying of the shoots will require attention.—*Peaches and Nectarines:* Persevere in syringing the trees, morning and afternoon, until the fruit begins to approach maturity, and well wet the borders after closing the houses in the afternoon, otherwise it will be difficult to keep the trees clear of red spider; give inside borders a good soaking of liquid manure occasionally; give air abundantly on fine days; and towards the end of the month a little may be given at night, when the fruit is beginning to ripen; keep a little fire-heat at the same time, as this will improve the flavour of the fruit, and also mature the wood. In the later houses, keep the shoots well tied down, and do not retain too many; thin the fruit as it is needed, regulating the crop to the strength of the tree—a light crop on small or weak-growing trees, and a tolerably heavy crop on large, strong, robust-growing trees.—*Figs:* When the first crop of fruit approaches maturity, water should only be used sparingly; it cannot, however, be safely dispensed with for any length of time, particularly with trees in tubs or pots, or otherwise confined, as the second crop, which will now be showing, would suffer.—*Cherries:* Give plenty of air, and water sparingly as the fruit approaches maturity. After the fruit is gathered, remove the trees out-doors, and see that they are attended to, in being well watered, &c.—*Strawberries:* See former directions.—*Melons:* Never let the bottom-heat get much below nor much above 80°; give liberal supplies of water, and keep the shoots well thinned; plant out for late crops.

Out-Doors.—See to the protection of *Wall Trees* when the weather is unfavourable; on mild nights it will not be necessary to put the coverings over

the trees, but it is safer not to remove them altogether until all fear of danger from frost is over. Gardeners will not soon forget the memorable frost of the 19th and 20th of May last year, which did such injury to the crops. Attend to the disbudding of *Peaches* and *Nectarines*, removing but few shoots at a time: give the trees a good syringing occasionally.—M. SAUL, *Stourton, York.*

VEGETABLES.

WITH May comes in the gardener's busiest season, especially in regard to the cultivation of Vegetables. The many kinds of seeds sown early last month will, ere this, have pushed through the ground and be coming forward, and the operation of moulding up and hoeing between them, must be performed as quickly as possible, the plants being large enough to admit of having the hoe passed among them without injury. Not only is it necessary to mould them up or hoe them as a protection against frosts and cold winds, but the operation also assumes importance from the fact that moving the soil around the plants tends to strengthen the roots, by increasing its mellowness, and by facilitating the action of fresh air, of the dews of heaven, &c. Therefore earth up liberally all crops which require this aid, and do not stint in any way the free use of the hoe. I will add a few suggestions which may be acted upon as the month wears away. In the first week main crops of *Turnips* may be got in by sowing these and *Turnip Radishes* alternately in drills, a few inches apart; the Radishes will be fit to draw before they at all discommode the Turnips, and will afford food for the turnip or black-fly when too old for use, which is a matter of some importance during dry periods. *Radishes* should be sown at intervals of about a fortnight, wherever it is necessary to have a constant supply both tender and good. Stake *Peas* as the plants require this aid, and sow successional crops as soon as those of the former sowings are well through the ground. Make two successional sowings of *Dwarf French Beans* in a warm sunny aspect. *Tomatos, Capsicums* or *Chillis*, and any early *Beans* in boxes, should be placed under cold frames to become hardened preparatory to planting them out about the end of the second or third week, tilting the lights well at the back, and giving all the air possible by night, without running undue risk of frost. Transplant early *Savoys, Broccoli, Cauliflowers, Brussels Sprouts*, &c., when large enough, taking advantage of any warm showery or cloudy weather wherein to do so. Transplant also *Parsley* and *Herbs* of sorts as soon as they are "fit to handle," especially *Sweet Basil, Pot Marjoram*, &c., which delight to have a nice bottom-heat. A bed of fermenting materials should be formed in a sunken space whereon to "prick out" the main sowing of *Celery*, as the plants become sufficiently large so to do. Should a dry interval set in at this juncture, the water-pot must be kept freely at work at eventide, or in the early morning. The latter is the better, as the crops are then enabled to dry somewhat ere night comes on, and with it, perhaps, a great decrease of temperature. The necessity which will exist to water freely at such a time is obvious, when we take into consideration how very superficial the root capacity of seedling plants is at this date, and how very quickly the sun parches the surface of the soil.

Ridge Cucumbers, Gherkins, and *Vegetable Marrows* should be potted off, and placed in a position where they will become properly hardened, without in any great degree checking their growth. *Cucumbers* and *Melons* may be grown with far greater freedom now than a month or two previously. Just place a little sweet fermenting material into a pit, or in a heap neatly under a box-frame, and adding soil to the surface, turn the plants out therein. Less artificial heat and more air are now needed.—WILLIAM EARLEY, *Valentines.*

CAMELLIA PRINCESS MARY.

WITH AN ILLUSTRATION.

SOME few years since—in April, 1866—this very fine variety of *Camellia japonica* was exhibited by Mr. Salter, of Hammersmith, at a meeting of the Royal Horticultural Society's Floral Committee, and was awarded a First-class Certificate. On the retirement of Mr. Salter the plant came into the hands of Mr. Bull, of Chelsea, to whom we are indebted for the flower which Mr. Fitch has represented in the accompanying plate.

The plant is, we believe, of English origin, and is remarkable for its bold and rich deep green foliage—a feature which adds very greatly to the value, as decorative evergreen shrubs, of those varieties which possess it. The flowers are of full average size, and furnished with broad, smooth, stout petals, arranged with remarkable symmetry, and of a bright crimson-red colour. It is a variety in every way worthy of the most extended cultivation.—T. MOORE.

THE "SETTING" OF GRAPES.

THERE was a period, almost within the recollection of middle-aged men, before Californian or Australian gold was discovered, or cheap glass had become the order of the day, when vines were generally grown in houses glazed with diminutive panes of glass, nearly one-half of the roof being formed of overlaps, and the other of timber; and when also, apparently to increase the quantity under limited accommodation, the young wood was trained in as closely together as that of the Morello cherry generally is now. The consequence was indifferently ripened wood; and when the flowering season came round the rods showed abundance of long lanky semi-tendrils, with a few flowers here and there about their extremities. This state of matters required an amount of skill to "set" the Grapes which was not always forthcoming.

The scene has now changed. Large, light, airy structures are the order of the day; the improvement in the vines grown in them being nearly as great as that in the structures themselves. But notwithstanding all these advantageous circumstances, indifferently "set" grapes are by no means uncommon. How best to "set" grapes is hence a subject which, neither unfrequently nor unprofitably, occupies the pages of Horticultural periodicals, particularly at the season of the year when the flowering period again comes round. Like many other processes connected with the practice of horticulture, there is much diversity of opinion amongst cultivators as to how this "setting" can best be done.

All other conditions being favourable, it is essential, in order to maintain and keep up to the highest possible point the health of the vine (particularly while it is forming its young wood, which includes the period of its flowering), to grow it in a moderately moist atmosphere, more or less water being applied in proportion to the amount of artificial heat used, or the strength of the sunshine. The fact that this is generally understood and generally practised, has something

to do with grapes not "setting" satisfactorily—the more so, when the weather is dull and cloudy while the flowering period lasts; because the vine, like most other exotic fruits, "sets" its flowers most surely in a warm, somewhat dry atmosphere—not necessarily dry, however, the whole 24 hours, but only for a few hours during the warmest part of the day, *the period when impregnation takes place*. In bright, sunny weather this dryness is obtained, and at the proper time, by the necessary ventilation required to regulate the temperature, which allows the moist atmosphere to pass gradually out, and to be replaced by a more congenial, drier and warmer air. When dull sunless weather occurs at this period, special attention should be given to keep the pipes sufficiently hot to allow of a temperature of from 80° to 85° being kept up for a few hours each day, the ventilators being at the same time opened sufficiently to allow of a slow change of atmosphere, so as to carry out the extra moisture with which it may be surcharged.

Grape-growers vary their treatment considerably at this stage of growth. Some prefer a very dry atmosphere and very high temperature, which doubtless is favourable for the "setting" process in, at least, some varieties, such as *Muscats*, *Black Morocco*, &c., but is unfavourable to the health of the vine at this critical period of its growth, while actively engaged developing its tender shoots and delicate foliage, causing the growths to "come weak," and favouring the rapid increase of injurious insect enemies, which are almost sure to make their appearance at a later period in large numbers—a standing source of annoyance and injury during the remainder of the season. Others prefer a moist atmosphere, and even recommend continuing syringing during the flowering process, if the weather proves fine, and plenty of sunshine occurs, so as to admit the atmosphere inside the houses to get dried for a few hours every day. This may be safe practice if the conditions are as just explained; but if otherwise, it is unsafe, for unless the pollen is quite dry, it will not readily act, and consequently, impregnation will become all but impossible.

The confined state in which vines under glass are grown is not favourable to the process of impregnation—the glass excluding them to a large extent from the action of the wind, which would otherwise largely aid in spreading the pollen, and bringing it in contact with the stigma. I have long had in use here an admirable but very simple form of trellis attached only to the top and bottom of the vineries and peach-houses, &c., with the horizontal wires screwed tight to which the vines, peaches, &c., are trained. A sharp blow with the hand makes it vibrate like a fiddle-string, sending up from and surrounding each bunch with clouds of pollen. This is certainly a much better plan than touching the bunches with the hand, as is generally done, saving much time, and, moreover, doing the work more effectually.

As is well known to all engaged in the culture of the vine, there are some varieties which "set" under ordinary treatment, in the greatest abundance, such as the different varieties of *Hamburgh*, *Trebbiano*, *Black Prince*, &c. There are not

a few others, which will not "set" freely, unless grown in a high temperature, and assisted in the process of impregnation, in some way—by dispersing either their own, or the pollen of other varieties amongst their flowers; and when this is properly attended to, I believe there are no varieties but what can be successfully "set" in all weathers. Such at least has been my own experience, with the single exception of the *Muscat Hamburgh*, which when started after the beginning of February "sets" with ordinary attention as freely as most other varieties, but when started a few weeks earlier, appears to "set" equally well, and will swell for a time till after the thinning of the berries takes place, soon after which, they begin to swell irregularly, whole shoulders having more than half their berries seedless, and scarcely half the usual size, while others in large numbers, do not grow much larger than peas. I have observed the same thing to a lesser extent, with other varieties of *Muscats*. Is this the result of partial but imperfect impregnation, arising from the want of sunshine or light? Certainly it is not from the want of heat, or caused by a stagnant damp atmosphere.

If it were possible, in general practice, to grow each variety of vine in a separate house, I believe the treatment of each, in the hands of expert culturists, would be slightly different. Some, such as the *Muscats*, *Black Morocco*, &c., would require both root and branch temperatures higher. Others, such as the *Hamburghs*, *Sweetwater*, &c., could be grown in comparatively cool houses. Some would succeed best in strong loams, others in lighter soils, all requiring thorough drainage, and a liberal allowance of water during the earlier stages of their growth. The variety of treatment applicable to the different varieties would be doubly important during the flowering period.

All this goes to show the difficulty of giving exact instructions as to treatment during the flowering process. In general, I would recommend all the *Muscats* and most of the shy-setting varieties to have the temperature increased both by night and day; the night temperature to run from 75° to 72°, being highest during the early part of the night, falling a few degrees towards morning, and rising during dull weather at least 10° for a few hours in the warmer part of the day, always accompanying the rise of temperature with additional ventilation. In bright sunny weather, the thermometer, with plenty of air on, may be safely allowed to rise from 90° to 95°; never omitting in some way the dispersion of the pollen during the hottest part of the day.

Free-setting varieties, such as the *Hamburghs*, set readily with an average of 6° or 8° less heat than the *Muscats*, but all vines should have additional heat, both by night and day, while in flower.—A. Fowler, *Castle Kennedy*.

PAULLINIA THALICTRIFOLIA.

In its foliage, this tropical climbing shrub bears a very striking resemblance to a fern; in fact, its slender stems, compound leaves, and light green colour, give it a close *primâ facie* resemblance to one of the scandent *Davallias*. Its beauty as a garden plant depends on its foliage, the flowers

being insignificant. The stems, which grow several feet in height, are slender and terete, clothed with velvety down. The leaves are deltoid-ovate, 4 in. to 10 in. long, triternately pinnate, with the main rachis flattened or slightly winged; there are six or eight pairs of pinnæ, and four to eight pairs of pinnules, which vary from one-third to two-thirds of an inch in length, and are obliquely

PAULLINIA THALICTRIFOLIA.

obovate, the upper ones being slightly cuneate, and the lower ones two or three-lobed; the terminal pinnule is obovate-cuneate. The flowers are in compound racemes from the leaf-axils, but are small and insignificant.

In a young state, such as that represented in the accompanying figure, it forms a very elegant fern-like tuft. When more fully developed, it resembles a climbing fern, and being light and slender in growth, forms a very handsome

specimen when trained over a trellis as a pot plant, or planted out so as to furnish a pillar or a rafter in a hothouse. The Messrs. Veitch and Sons have introduced it from Brazil.—T. Moore.

EARLY BEATRICE PEACH.

THIS is such a really valuable peach that a few words in its favour to those who are unacquainted with it may be acceptable. It is one of the seedlings of Mr. Rivers, from whom I got it direct amongst a lot of others in pots, and it has turned out one of the most useful on account of its earliness. This is the second year I have gathered from two trees before April was out, it being this year the 25th of April when I gathered the first three ripe. The fact that it is, though small, such a rosy-cheeked variety makes it valuable, and the flavour, moreover, is good for one so early. The *Early Rivers*, though quite as early, is not so desirable, on account of its sickly paleness,—entirely void of colour,—while the *Early Beatrice*, under the same conditions, is all a-glowing. It is a good setter, a good grower, and one which, though perhaps not proof against all diseases, is nevertheless cleanly inclined. I look on the Early Beatrice Peach now as quite indispensable to our varied, though far too limited, spring dishes of fruits; and I think Mr. Rivers deserves special thanks from all lovers of the peach—peach growers and peach eaters—for such a great acquisition to our early forced fruits. One of the two trees referred to I planted out in an early house, and this had two or three dishes of nice fruit on it. The one in pot matured to perfection thirty-eight. Though apparently quite at home in a pot, yet I look on the planted-out one for our future supply.—H. Knight, *Floors, Kelso.*

GARDEN LITERATURE.

ONE of the most important of recent publications affecting the classification of plants, and in this way bearing upon Garden Botany, is Mrs. Hooker's translation of Le Maout's and Decaisne's General System of Botany,* edited by Dr. Hooker. The reputation of the authors and of the editor would be sufficient of itself to stamp it as a work of authority indispensable to the work-table of every active botanist. The original French edition was issued in 1868, and the present translation differs from it mainly in the sequence of the Natural Orders, and in the introduction in the proper places of certain smaller orders, some twenty-four in number, which were omitted in the original. It is in the second part of the work that its great value consists. This portion comprises a clear and precise account of the structure and morphology of each order, accompanied by a sketch of its affinities, its geographical distribution, and its principal uses in medicine and the arts, the whole being profusely illustrated by

* *A General System of Botany, Descriptive and Analytical.* In Two Parts. I. Outlines of Organography, Anatomy, and Physiology. II. Descriptions and Illustrations of the Orders. By Emm. Le Maout and J. Decaisne. With 5,500 Figures by L. Steinheil and A. Riocreux. Translated from the Original by Mrs. Hooker. With an Appendix by J. D. Hooker, C.B. London: Longmans. 1873.

woodcuts beautifully engraved from M. Decaisne's clever and accurate analytical drawings—"the fruits of his life-long botanical labours." The arrangement or sequence of the orders is based upon that of De Candolle, as being the most commonly adopted in this and other English-speaking countries. A most valuable feature of this work is to be found in the editorial appendix on the classification of plants, in which, besides some apposite general remarks, is given a synopsis or analytical key to the classes, orders, &c., adopted in the text. This, as a compendious exposition of the most recent views as to the limitation and grouping of orders and alliances by one of our most learned and accomplished botanists, cannot fail to be of the utmost utility to those fellow-workers and students who have had less favourable opportunities for arriving at definite conclusions on this branch of the subject. Finally, there are good indices of technical terms, of names (generic, &c.), and of plants mentioned for their uses. No botanical library could now be considered complete without this standard work.

Mr. Williams' SELECT FERNS AND LYCOPODS* has reached a second edition, and being supplemented by many additional descriptions and figures of choice new species, may be recommended to Amateurs and others as the best and most complete book we have on the cultivation of Exotic Ferns, a family of plants which do not appear to have lost any of their popularity.

Of Mr. Scott's ORCHARDIST,† the second edition is also before us. This is one of the most complete descriptive lists of Hardy Fruits of which we have any knowledge. There is under each kind of Fruit an introductory chapter containing much useful and interesting as well as some critical information, and this is followed by descriptions of the varieties, alphabetically arranged, extending to 1,000 Apples, 1,800 Pears, and others in proportion. All Fruit-growers should keep it by them for consultation as occasion arises.—T. MOORE.

PRIMULA CORTUSOIDES AMŒNA & ITS VARIETIES.

THIS is a charming Primula; indeed, I think it superior to the *Primula japonica*, which has somehow been disappointing; as first exhibited it was most lovely, but I have never met with it in good condition since. That named at the head of this paper is well worthy of cultivation in any garden. It is hardy, as it has flowered several successive seasons in the open air at Ilford; but to have it in anything like perfection, it must be cultivated under glass. The soil best adapted for it is turfy loam, leaf-mould, and a very little rotted manure. I grow it all the year round in a span-roofed pit, cool and freely ventilated.

To have it in perfection, the potting must not be done in a careless manner. A good depth of crocks should be placed in the bottom of each pot, and over the crocks, some very fibrous loam or moss, to prevent the compost from mixing with and stopping the drainage. Pot the plants moderately firm, and do not water at

* *Select Ferns and Lycopods, British and Exotic.* Second Edition. By B. S. Williams, F.R.H.S., Victoria Nursery, Holloway.

† *Scott's Orchardist;* or, Catalogue of Fruits Cultivated at Merriott, Somerset. Second Edition.

the roots for two or three days, or, if it is in winter, a week afterwards; the plant should be moist at the roots, and the potting material must not be dry when the plants are potted. The most insidious enemy of this and many others of our fine Primroses is the red-spider. During summer, the plants should be syringed daily to keep this pest in check, as, if it is not destroyed, it will destroy the leaves, and the plants will not flower well the following season. If well treated, it is a free-growing plant, and readily increased by division.

The variety called *amœna* is the best and most showy. The white variety has a fault—the flowers do not open well out, and always look as if they were flagging. The lilac sort is pretty and distinct, and well worthy of culture. To show how it may be increased, I had a small plant of *amœna* in a 5-in. pot last year, in February, and from that plant I have now five large ones in 7-in. and 8-in. pots, and each plant has produced five or six trusses of flowers, and many single trusses had fifteen flowers expanded on them at one time; and a very fine effect they produced.—J. Douglas, *Loxford Hall Gardens, Ilford.*

THE APPLE: ITS CULTURE & VARIETIES.—Chap. IV.

THE distances at which the trees should be planted from each other must be determined by the size they have reached at the time of planting, and the kind of stock on which they are worked. I have endeavoured to show that in trees on the Paradise stock the growth is naturally much more restricted than on the Free stock, and therefore these are very much to be recommended to amateurs, because they can grow more varieties on the same space of ground. At the same time, I would by no means discourage the practice of planting trees worked on the free stock, even by amateurs, supposing that by careful root-pruning, they can be kept within reasonable bounds for some years. As, however, the effect of working on the paradise stock is to reduce the tendency to luxuriant growth, and to induce fruitfulness, it appears to me that where space is limited, the paradise stock will be found the most profitable. With unlimited space, trees on the free stock may be cultivated with great advantage, and be permitted a much more free development, although not allowed to ramble at will, because they must always have the hand of the pruner upon them.

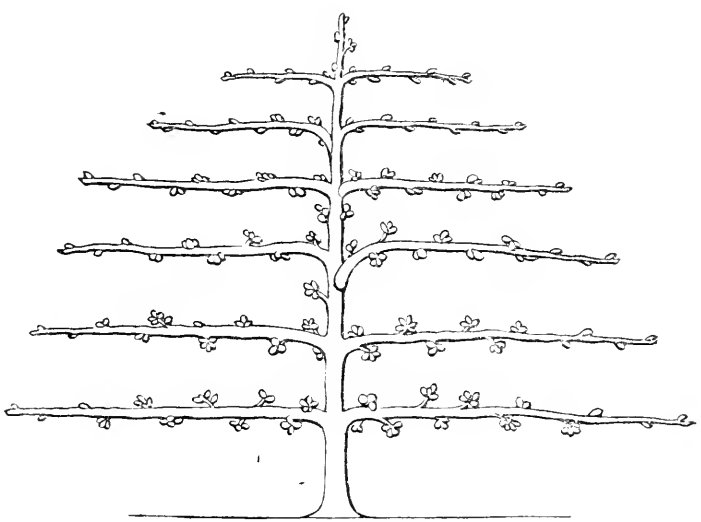
I have planted small trees on the paradise stock at three feet apart in the row, and the rows four feet apart, and have obtained a fair produce. At the end of two years they were lifted, in October, and replanted at four feet, and apparently without feeling the removal, as they bore some very fine fruit. Subsequently they were removed to six feet apart, each way, and they bloomed well, but little fruit followed, in consequence of the disastrous May frosts. This year the trees look very well at present. This will indicate the sort of process through which the amateur must pass his trees as they increase in growth.

Pyramids on the free stock, having generally a stronger growth and greater size, may be planted at from five to six feet apart to begin with. By successive liftings and transplantings in after years, this distance may be increased to twelve

feet, beyond which I conceive it would hardly be desirable to extend them in a limited space; and the amateur would have to depend upon summer pinching and autumn root-pruning to keep the trees within bounds. I must here observe that in all liftings and replantings, the ground should be carefully trenched over a depth of two feet, some of the soil being removed in order to admit of a liberal dressing of fresh maiden soil, particularly about the roots; also that weakly trees must be encouraged by liberal mulchings of rotten manure.

As the after management of these trees, both as regards summer and winter pruning, will be nearly identical with that required by trees trained on a different principle, I will now proceed to a consideration of the Espalier and Cordon modes of training which from an economical point of view, are very much to be recommended to the amateur cultivator, because the trees may be planted close to the sides of the paths, thereby affording especial facilities for carrying on the necessary works of pinching-back, pruning, and training, besides occupying comparatively little space.

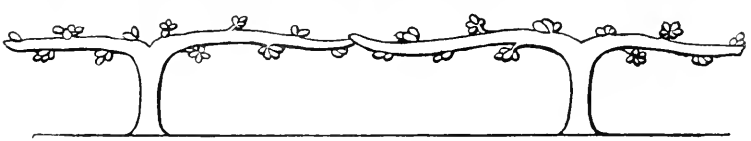
The most economical method of training both Espaliers and Cordons is that which is called the horizontal mode, that is, the shoots are so trained as to diverge at right angles from a central stem, as represented in the accompanying figures:—



ESPALIER TRAINING.

I believe it is possible in some nurseries to obtain trees which have been two, three, or four years trained and prepared, in which case it would be far better for the amateur to buy such, and plant them (in October), because they would have the foundation of good treatment laid, and would the sooner begin to return produce; but in the event of not being able to obtain such, it is best to commence with maiden trees. Here I must call attention to the remarks formerly made with regard to stocks, as their influence will be precisely the same in both cases.

If there is any exception to be made, it must be in favour of the Cordons, which should always be on the Paradise stocks. Maiden trees have generally, or ought to have, one strong predominant shoot from the bud, or graft, as the case may be. This shoot should be shortened back to within three or four buds of the base, which should be not less than 6 in. from the surface level of the soil. This shortening-back is best done when the trees are thoroughly dormant, and I presume that will be when the foliage and branches cease to exert any influence on the action of the roots, say towards the end of November, by which time most deciduous trees are denuded of their foliage, and we may reasonably conclude that the reciprocal action between the roots and branches is weak, and that then we may safely shorten the main shoot, in order that the dormant buds left may have the benefit of storing up resources sent up by the roots, so as to break into a strong and luxuriant growth in the spring. For, be it observed, that although we desire to place a tight but judicious curb on the after-growth, we want a strong and healthy subject to work upon, and must lay a good foundation by giving the first year's growth a free development and every encouragement. It is at this point that the real education or training of the tree commences, and this is also the point at which so many mistakes are made. *If left alone*, the trees will continue to develop a luxuriant growth of wood, and will be some years before



CORDON TRAINING.

they exhaust their tendency to make growth and proceed to fruit-bearing; but on the contrary, by lifting and replanting as soon as the leaves drop, such a check is given to future development that little or no shortening-back is necessary, and the trees, on the paradise stock at least, will begin to form fruit-buds the next year. Some varieties on the free stock may submit to this course of treatment for Cordons, but as a general rule, they are altogether too free in growth and better suited for such trees as have more room for development.

In training trees for Espaliers, a somewhat different mode of treatment must be adopted at the first, for whereas the cordon will only require one strong shoot diverging each way from the centre stem, the espalier will require, in addition, a central stem trained vertically, to form the foundation of future horizontal branches; and in this case it is best to leave the trees two years without lifting and replanting. To have well-furnished trees, it is best to be satisfied with two side shoots every year, so that the centre shoot at the dormant season should be shortened to 8 in., which is about the best distance at which to train the horizontal branches, and from this, again, one centre shoot must be led up, and two side branches must be trained horizontally, the same process being repeated year by year until the space is furnished.—JOHN COX, *Redleaf*.

NOTABLE NEW PLANTS AND FLOWERS.

[F.C.C. = First-class Certificate; S.C.C. = Second-class Certificate; B.C. = Botanical Certificate; F.C. = Floricultural Certificate.]

ARALIA GUILFOYLEI [F.C.C.].—A fine greenhouse shrub, with pinnate green leaves, the leaflets serrated and edged with cream-colour; distinct in character.—*Mr. W. Bull: R.H.S., May* 7.

ASTILBE JAPONICA AUREO-RETICULATA [B.C.].—A very prettily-marked form of the well-known *Spiræa*, or *Hoteia*, or more properly *Astilbe japonica*, with the leaves veined with yellow.—*Messrs. E. G. Henderson & Son: R.B.S., May* 14.

AURICULA (ALPINE) DIAMOND [F.C.C.].—Flowers clear claret-red, shaded with dark, a fine hue of marginal colour, and smooth golden paste; fine pip and truss.—*Mr. C. Turner: R.H.S., May* 7.

AURICULA (ALPINE) LADY ELVEY [F.C.C.].—Flowers with shaded deep purple ground, brighter on the edge, and clear smooth straw-coloured paste; fine quality. —*Mr. C. Turner: R.H.S., May* 7.

AURICULA (ALPINE) NAPOLEON III. [F.C.C.].—Flowers rich dark shining maroon ground, and clear smooth golden paste; of extra fine quality, and highly attractive.—*Mr. C. Turner: R.H.S., May* 7.

AURICULA (ALPINE) QUEEN VICTORIA [F.C.C.].—Flowers with pale purple ground, heavily shaded towards the centre of the flower, and with straw-coloured paste; very fine pip and truss.—*Mr. C. Turner: R.H.S., May* 7.

AURICULA (ALPINE) SIR BARTLE FRERE [F.C.C.].—Flowers shaded plum ground, very bright, with pale yellow paste; very large, bold pip, and fine truss.—*Mr. C. Turner: R.H.S., May* 7.

AURICULA (ALPINE) SUSIE MATHAMS [F.C.C.].—Flowers bright lilac, shaded, and with smooth straw-coloured paste; very distinct and pretty.—*Mr. C. Turner: R.H.S., May* 7.

AURICULA (GREY-EDGED) C. E. BROWN [F.C.C.].—Flowers with dark ground colour, and fine, clear, smooth paste; good circular pip; very promising.—*Rev. H. H. Dombrain: R.H.S., May* 7.

AURICULA (GREY-EDGED) REV. A. MATTHEWS [F.C.C.].—Flowers with narrow zone of a dark purple ground colour, white smooth paste; fine bold pip and truss. —*Mr. C. Turner: R.H.S., May* 7.

AURICULA (SELF) CANTAB [F.C.C.].—Flowers of a shining dark maroon-black ground, and fine white paste; a flower of excellent quality, and good substance. —*Mr. C. Turner: R.H.S., May* 7.

AURICULA (SELF) CHARLES J. PERRY [F.C.C.].—A splendid variety, the flowers having a bright deep violet ground, and clear white paste; pip and truss extra fine, and excellent habit.—*Mr. C. Turner: R.H.S., May* 7.

AZALEA (INDICA) APOLLO [F.C.C.].—Flowers white, flaked and pencilled with carmine-red; large, stout, and of fine form, and very free.—*Mr. C. Turner: R.H.S., May* 7; *R.B.S., May* 14.

AZALEA (INDICA) TRIOMPHE DE WONDELGHEM [F.C.C.].—A large and showy double-flowered variety, of an orange-salmon colour, the flowers much fringed; a capital decorative variety, being very free.—*Messrs. Veitch & Sons: R.H.S., May* 7.

BEGONIA SUNRISE [F.C.C.].—A brilliant crimson-scarlet variety of the *B. boliviensis* strain; with narrow elongated dentate leaves, and long-petaled flowers, brighter in hue than any seen before.—*Mr. W. Bull: R.H.S., May* 7.

Caladium Prince Albert Edward [f.c.c.].—The leaves take a somewhat intermediate character between those of *C. Chantinii* and *C. Bellemei*, and are white, marbled and edged with lively green, and veined with dull red lines.—*Messrs. E. G. Henderson & Son: R.H.S., May* 7.

Calanthe Rollissoni [b.c.].—A pretty hybrid, between *C. veratrifolia* and *C. Masuca*, with the habit of the former; the flowers, with delicate lilac sepals and petals, and a deeper lip.—*Messrs. Rollisson & Sons: R.B.S., April* 23.

Cattleya Mendelii [b.c.].—A fine variety of Cattleya of the labiata type, the stems bearing a solitary oblong leaf; the flowers having blush sepals and petals, the lip beautifully fringed at the edge, orange at the base, deep purple, with pallid veins towards the tip.—*Mr. Williams: R.B.S., May* 14.

Clematis Duchess of Teck [f.c.].—A grand variety of the lanuginosa type, with pure white flowers measuring 8 in. across, and very slightly tinted with the most delicate mauve.—*Messrs. G. Jackman & Son: R.B.S., April* 23.

Clematis Duke of Richmond [f.c.].—A large-flowered variety of the lanuginosa type, the flowers of a delicate mauve, with a slight flame of a deeper hue along each segment.—*Messrs. G. Jackman & Son: R.B.S., April* 23.

Clematis Lady Stratford de Redcliffe [f.c.].—A hybrid variety, the result of a cross between the patens and Jackmanni sections, and forming a kind of intermediate type; colour pale shining bluish mauve, with a pale flame along each segment; very fine.—*Messrs. G. Jackman & Son: R.B.S., April* 23.

Clematis Mrs. Villiers Lister [f.c.].—A handsome variety of the patens section, the flowers rather narrow-sepaled, but flat; and very distinct, from having a bar of purplish red near the base.—*Mr. Noble: R.B.S., May* 14.

Dæmonorops fissus [b.c.].—An elegant stove palm, with broad pinnate leaves and somewhat spiny leaf-stalks. Like the next, very ornamental and useful in the small state.—*Messrs. Veitch & Sons: R.B.S., May* 14.

Dæmonorops palembanicus [b.c.].—A fine pinnate stove palm, with the leaf-stalks freely armed with short spines (see p. 136).—*Mr. Bull: R.B.S., May* 14.

Draba ciliata [f.c.c.].—A charming early-flowering Alpine plant, with an extremely dwarf, close habit, and bearing numberless racemose heads of pure white arabis-like flowers.—*Messrs. Backhouse & Son: R.H.S., May* 7.

Dracæna Shepherdii [b.c.].—A bold-growing variety of free habit, with the tall, dull green leaves edged with pale green, changing to coppery orange.—*Mr. Bull: R.B.S., May* 14.

Dracæna splendens [b.c.].—A dwarf, close-growing variety, of dense habit, with short, spreading, bronzy leaves, the central ones rosy crimson; a much better grower than *D. nobilis*.—*Mr. Bull: R.B.S., May* 14.

Gloxinia Martha [f.c.].—An erect-flowered variety, the blossoms having a pure white throat, and shaded violet lobes, slightly margined with white.—*Mr. Stone: R.B.S., April* 23.

Gloxinia Pierre [f.c.].—A pendent-flowered variety, the flowers having pale violet lobes and shaded throat, profusely spotted.—*Mr. Stone: R.B.S., April* 23.

Masdevallia Denisoni [f.c.c.].—A charming plant, closely related to *M. Harryana*, the flowers being of a very brilliant deep magenta-crimson, glowing as if luminous. It is remarkably high-coloured and attractive.—*Lord Londesborough: R.H.S., May* 7.

Odontoglossum vexillarium [f.c.c.].—A most magnificent orchid from Antioquia, the large flowers of which are most effective; the sepals, petals, and

enormously broad bilobed lip are of a beautiful lilac-rose.—*Messrs. Veitch & Sons: R.B.S., April* 23; *R.H.S., May* 7.

ORANGE VARIEGATED OTAHEITE [B.C.].—A sport in which the leaves are very freely margined with creamy white.—*Messrs. Paul & Son: R.B.S., May* 14.

PANDANUS VAN GEERTII [B.C.].—An elegant-habited stove plant, the long spiny-edged leaves having a close and elegantly pendulous growth.—*Messrs. Rollisson & Sons: R.B.S., April* 23.

PANSY PLUTO [F.C.].—A glossy black-flowered variety, smooth, and of good form, recommended for bedding purposes.—*Mr. T. S. Ware: R.B.S., May* 14.

PELARGONIUM (ZONAL) WHITE CLIPPER [F.C.C.].—Very pure white, dwarfish in growth, with flowers of fine form and substance; a free bloomer, with long-stalked trusses, raised by Mr. J. Must.—*Dr. Denny: R.H.S., May* 7.

PHŒNIX RUPICOLA [F.C.C.].—A bright green-leaved, pinnate Palm, of a handsome, spreading, recurved habit, and exceedingly elegant in appearance.—*Messrs. Veitch & Sons: R.H.S., May* 7; *R.B.S., May* 14.

PLATYLOMA BELLUM [F.C.C.].—A pretty dwarf evergreen Californian Fern, with narrow, bipinnate, glaucous-green, elegant fronds.—*Messrs. Veitch & Sons: R.H.S., May* 7; *R.B.S., May* 14.

PLATYLOMA BRACHYPTERUM [F.C.C.].—A dwarf evergreen Fern from California, resembling the last in having narrow, bipinnate, glaucous fronds, with few but somewhat larger pinnules; very elegant.—*Messrs. Veitch & Sons: R.H.S., May* 7; *R.B.S., May* 14.

POLYANTHUS CRŒSUS [F.C.].—Flowers bright yellow, with deep orange centre, forming large, full, and bold trusses.—*Mr. T. S. Ware: R.B.S., May* 14.

POLYANTHUS PARISINÆ [F.C.]—A large and bold vigorous-growing variety; the flowers pale sulphur-white, with a primrose centre.—*Mr. T. S. Ware: R.B.S., May* 14.

PRIMULA (ACAULIS) THE GIANT [F.C.].—A very large double deep sulphur-coloured variety, late in flowering, and much grown by some of the London market gardeners for market purposes.—*Mr. T. S. Ware: R.B.S., May* 14.

PTYCHOSPERMA KUHLII [B.C.].—A noble pinnate palm, with broad fronds and pinnæ, the surface of which is prettily mottled with brown in the younger leaves.—*Messrs. Veitch & Sons: R.B.S., May* 14.

ROSE (H.P.) ETIENNE LEVET [F.C.C.].—Flowers bright carmine-red, the tint of which becomes paler with age; a large bold full flower, of fine build and vigorous habit.—*Messrs. Paul & Son: R.H.S., May* 7.

ROSE (H.P.) MADAME LACHARME [F.C.].—Flowers white on the exterior, with a delicate pink centre, large, full, and of the finest quality; not a true white rose, but more nearly approaching that character than on any previous occasion when it has been shown.—*Mr. C. Turner: R.B.S., May* 14.

ROSE (H.P.) MAXIME DE LA ROCHETERIE [F.C.C.].—Flowers shaded red, paler on the edge; a large full reflexed flower of the build of John Hopper, and likely to prove a good exhibition variety.—*Messrs Paul & Son: R.H.S., May* 7.

ROSE (H.P.) STAR OF WALTHAM [F.C.].—Flowers pale cherry-rose, tinted with violet; a very finely-formed and full flower, of splendid quality, and the gem of the season.—*Mr. W. Paul: R.B.S., April* 23.

ROSE (TEA) PERFECTION DE MONTPLAISIR [F.C.C.].—Flowers very delicate yellow, deeper in colour in the centre; a lovely Rose in the bud state; distinct and good.—*Messrs. Veitch & Sons: R.H.S., May* 7.

J.L. Macfarlane Del et Zinco

F. Waller Imp

Princess of Wales Peach

Rose (tea) Madame Cecile Berthod [f.c.].—Flowers a pale bright yellow, of full substance, and of good shape; first-rate in quality.—*Mr. W. Paul: R.B.S., April* 23.

Saccolabium ampullaceum moulmeinense [b.c.].—A very charming stove orchid, of dwarf growth, with spikes of flowers of a deep purplish-rose; a remarkably showy variety.—*Messrs. Rollisson & Sons: R.B.S., April* 23.

Sempervivum triste [f.c.c.].—A very distinct and apparently small-growing, hardy, succulent-leaved perennial, the oblong-acute, dark bronzy leaves tinted at the base with red.—*Messrs. Veitch & Sons: R.B.S., April* 23; *R.H.S., May* 7.

Vanda Parishii [f.c.c.].—This fine Indian orchid, which was introduced about four years ago, was now shown for the first time in bloom in Europe; it has broadly-oblong distichous leaves, and yellowish-green flowers spotted with cinnamon colour on the sepals and petals, and having a purplish lip: these flowers have a strong angelica-like scent.—*Lord Londesborough: R.H.S., May* 7.

Vriesia reticulata [b.c.].—A bold-habited Bromeliaceous plant, with the glaucous pale green leaves reticulately marked with darker green; it is related to *V. Glaziouana.—Mr. Bull: R.B.S., May* 14.

PRINCESS OF WALES PEACH.

WITH AN ILLUSTRATION.

UR figure of this noble late Peach was prepared from specimens kindly transmitted by the Rev. W. F. Radclyffe. It is one of the novelties for which we are indebted to the successful efforts of Mr. Thomas Rivers, of Sawbridgeworth, who raised it from Pavie de Pompone. Mr. Radclyffe remarks concerning it:—"Its season here, at Okeford Fitzpaine, is from about the 12th to the 24th of October. The specimens sent had not arrived at their full size, which is about from 9 in. to 10 in., as, owing to the mischief done by insects, I could not let them stay longer. The skin is cream-coloured, and the cheek towards the sun is either blush or mottled like those sent. The flesh is melting for so late a season, and not woolly; it is of good flavour, and the flesh is very red for some depth round the stone. Though raised from a clingstone, its flesh separates freely from the stone. The trees here, three in number, are very hardy and robust. It sets its flowers better than most sorts. Its flowers are very large and lovely. The glands are round."

Our note of the fruit sent runs thus:—Fruit, above medium size, straw-coloured, with a greenish tint on the shaded side, flushed with red where exposed, and there marked with irregular spots and blotches of deeper purplish-red. Flesh, pale yellow, deeply tinted with red round the stone, which parts freely. Dr. Hogg describes it as very large and terminated by a nipple; the flesh melting, juicy, and very richly flavoured. Mr. Scott, in the *Orchardist*, remarks that "it requires forcing; otherwise it is useless." To the foregoing we may add Mr. Rivers' own description of this variety, which reads thus:—"Very large; one of the largest Peaches known, and one of the most beautiful, its colour cream, with a rosy cheek; melting, rich, and excellent; ripens just before *Desse Tardive*, and is very valuable. Flowers very large and beautiful."—T. M.

THE SUMMER CARPETING OF STANDARD ROSE BEDS.

FIRST, should it be done? and secondly, with what? In my practice I have answered the question both ways. My opinion now is in favour of a surface covering of the soil. Doubtless the best for the Roses is a coat of nice juicy manure, but this does not harmonise nicely either with the fragrance or the sight of Roses. It is the right thing in the right place in nursery lines or grounds for growing Roses for exhibition, but most decidedly the right thing in the wrong place in all Rosaries, or flower gardens, or pleasure grounds—and of course, the majority of Roses are so placed as not only to produce flowers for cutting, but plants, leaves, buds, and blossoms to enjoy. Their perfect enjoyment by ladies is scarcely compatible with surface muck mulchings, or the various compounds of earth with night-soil, &c., so that the cultivator is almost driven to a choice of two evils, as they are mostly thought—bare earth, or low-growing plants and flowers. Bare earth is not only objectionable to the eye, but it is more than doubtful whether plants like it. In a state of nature the roots of briar and roses have a double covering, the earth, and the grass and weeds, consequently, it is unnatural to leave the layer of earth that at times barely covers the roots to be baked by the fierce rays of the sun. On strong soil the roots must need be ruptured by the drought-formed fissures; and where the friability of the soil proves a sure antidote to cracking, it is more than doubtful if the roots relish their severe baking.

The idea has been forced upon me, by the large per-centage of weak and diseased and dead plants in uncarpeted beds, that a living carpet is desirable when a dead one cannot be used. The maintenance of any more agreeable temperature, and the preservation of moisture, probably would more than compensate for the impoverishment caused by the growth of the living screen. However, my views upon this important matter are in a sort of nebulous state, and I should be pleased to hear the opinions of others before allowing this to consolidate into deep and permanent conviction. What with red rust and other mortal diseases, Rose-growing about here is becoming more and more of a lottery every year, and it would be indeed a boon if any one could point out a way to have fewer blanks, that is, deaths, among our Roses.

Considering the point to be for the moment established that a surface carpet of living plants is desirable, we come to the second query—What plants shall we use? Mignonette is perhaps the oldest surfacing for rose-beds. It is congruous, and in many respects most suitable. Its want of colour (for both the white and scarlet Mignonette are alike fictions of the Catalogues) is a decided advantage, and there is nothing in Mignonette to compete with the blushing beauty of the Rose. Then, again, its humble stature, even as a giant, in no way competes with nor lessens the dignity of standard Roses; while its fragrance is complementary to, rather than a rival of, the sweet odour of Roses. The two make one bouquet of inimitable sweetness, reminding one of a happy marriage, when two lives become

but one higher, nobler, sweeter life. But Mignonette is an arrant thief earthwards; its hungry roots contend with the roots of the Rose on its own ground, and too often come off with the best of the sport, that is, the richest of the food. In a word, Mignonette is too expensive a carpet, since it takes too freely of the food of the Rose to be safely used. And the same holds good of any other surface coverings, such as *Nemophilas*, *Sanvitalias*, *Virginian* and other *Stocks*, *Calliopsis*, *Candytuft*, *Clarkias*, *Collinsias*, &c. The *Saponarias* seem to take less out of the ground than almost any other annual, and form a simple carpet, that covers the ground well without challenging contrasts with the Roses above them.

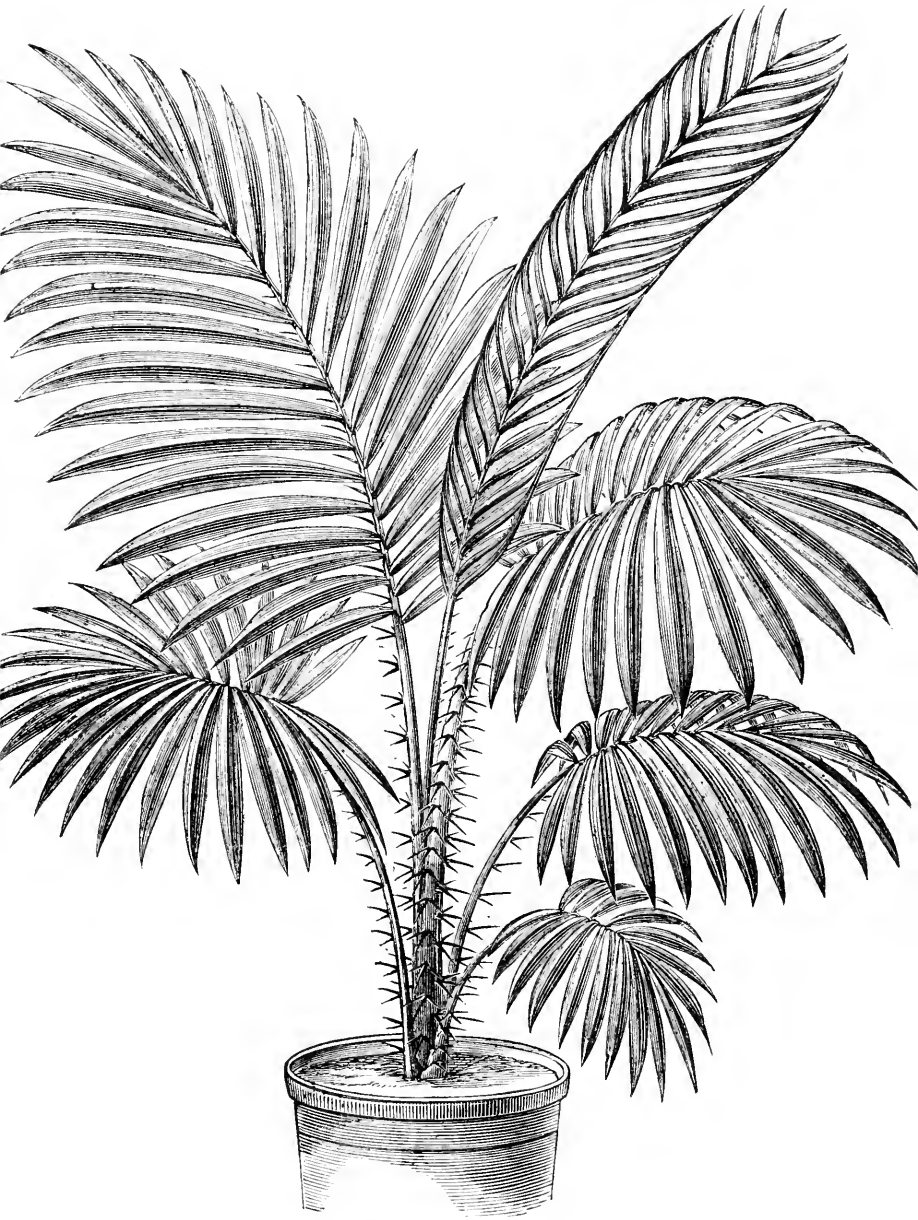
Among bedding plants, *Verbenas* are among the worst, because such ravenous feeders. *Alternantheras* and *Golden Feather* are pretty good, and seem non-exhaustive. Unfortunately, the *Cerastiums* drain the soil dry of manurial strength. I don't quite despair of finding a good carpet among *Sedums*, *Saxifrages*, *Echeverias*, &c. These being accustomed to live on the bare face of rocks, could hardly need much out of our rose-beds; and the eye might speedily come to admire their beauty in curious contrast with the glory of the Roses above them. I advance these views, however, as guesses, rather than certainties, and with the hope of setting others to work to guess out with certainty the two problems,—Is it desirable to carpet the surface of our standard Rose-beds with living plants, and if so, what plants are the best for this purpose?

Doubtless some readers may supplement their answer with the statement that standard Roses have had their day, and belong to the age of cut monstrosities in shrubs and trees. Why not let the rose be its own covering to its own roots, by bringing it down off its stilts, to dye its mother earth with its beauty, and perfume it anew with its own living fragrance. I fancy I hear the echo of a more refined taste in the no distant future repeating, Why not? But meantime the question is, how to make the best of our standard Roses, at bottom as well as top.—D. T. Fish, *Hardwicke House, Bury St. Edmund's.*

PICTURES OF PALM-TREES.

Dæmonorops palembanicus.

THE genus *Dæmonorops* is an offshoot from *Calamus*, and contains many species which are exceedingly ornamental objects in our plant stoves. They have a close general resemblance, at least in the young state represented by our figure, being distinguishable, however, at sight by peculiarities in the leaves and spines with which the stems are very freely armed. *D. palembanicus* is remarkable for its numerous elongate linear very much acuminated pinnæ, which are three-nerved, setose on the margins and keel, as well as on the two nerves above. It is a native of the Eastern Archipelago, especially of the island of Sumatra. We have to thank Mr. Bull for our illustration, and take the annexed description from his catalogue:—"One of the most elegant of Palms, and, together with *D. periacanthus*, exceedingly appropriate for table decoration and other ornamental purposes. The leaves are broadly ovate, pinnate, consisting



DÆMONOROPS PALEMBANICUS.

of numerous narrow elongated segments, and they are supported by leaf-stalks which bear numerous deflexed spines, which are thickened at the base. The young leaves are of a bright cinnamon-brown, and the contrast between this brown

colour and the deep green of the matured leaves renders the plants exceedingly beautiful at the time they are in course of development." The young leaves of *D. periacanthus* are straw-coloured, instead of cinnamon-coloured.—T. Moore.

TENDRILS OF VINES.

THOSE who are acquainted with Vines know well that, like many other climbing plants, they have tendrils or claspers for support. Those of the vine shoot out from the young wood on the opposite side to the "leaf-buds," and also on the shanks of the bunches. It may not, however, have been generally observed that those tendrils which do not catch hold of some contiguous substance soon decay, while those that have caught hold last throughout the season. This may seem strange, because in both cases the tendril must have equal support or nutriment from the vine; therefore the cause of the decay of the unfixed tendrils must be traced to some other source. At present I can only suppose that they resemble the defunct sinew or tendon of an animal, and which has become so by lack of use. It is an odd comparison, but I have none that better answers my purpose.

Last season, I fixed some small pins of lead upon a few vine-tendrils. In some cases they were beyond the reach of their claws or ends, and these tendrils soon withered, while those that could lay hold of and curl round the pieces of lead lived through the season, no doubt, because they were enabled in some measure to fulfil their functions, which the others were not able to do, and so became defunct in a similar way, as before observed, to an unused tendon of an animal.

Some cultivators may consider it of little importance whether the tendrils are pruned off or not. For my part, I prefer leaving them on the vine, because they may in some degree render it support along with the foliage, through the influence of the atmosphere.—J. Wighton, *Cossey Park.*

CONVERTIBLE VASE FOR FLOWERS OR FRUITS.

IT must have often occurred to many besides myself, that if they could only procure this or that flower, what a much prettier arrangement they could have made. It must also have often occurred to many that, if the same limited number and variety of flowers had only been arranged in this or that form of vase, instead of the one they happen to be placed in, how much better they would have looked. Some years ago I rarely saw a dinner-table decorated, but what some new form or other suggested itself to me as an improvement upon what was already in my collection; and when time permitted the reduction of these ideas into the form of working drawings, an order to the zinc-worker or glass-blower was the usual result. In this way I got together a great variety of vases, dishes, stands, &c., and then found it best to wait until the flowers arrived, before determining what vases should be used. Before my collection became so varied, I used to get out a certain set of vases, as suitable for a table of a certain

size, and to order flowers that would look well in those vases; and if the flowers ordered arrived, all went well. But the best-intentioned of florists cannot always supply what they confidently promise; and my experience teaches me that the least trouble in the end is to get the flowers first, and having sorted them, and put them into separate vessels of water, to look over the collection as a whole, and then to determine the form of vases to be used. I have often thought of sending you sketches from my collection, and now forward you one of a vase which I have found more generally useful for either fruit or flowers than any other form I know of.

This vase consists of the following eleven parts:—A glass foot, half-an-inch thick, into which is fixed a metal tube, 2 in. long; six pieces of metal tube each furnished with a male screw at one end and a female screw at the other, and all the screws alike; of these six, two are 1 in. long (fig. C), and four are 2 in. long (figs. A B), two of these four having a projecting flange half an inch wide at the end next the male screw (fig. A); three glass dishes, of the respective diameters of 5, 9, and 13 in., and each having in the centre a tubular hole, so that it can pass over any of the metal tubes and rest on a flange; the dishes are about 2 in. deep and the metal tube is nearly an inch in diameter; the remaining part is a trumpet-shaped piece of glass, having at one end a male screw, like all the others, and at the open end an edge turned in more than half an inch. This inversion of the lip is found to be of great use in holding the ends of the lateral shoots of Fuchsia, which, by thus lying in a natural position, display their blooms without crowding.

When all these pieces are put together, it forms a vase of 28½ in. high, as shown in the sketch. The dotted lines show that the top piece may be screwed into the foot, without any intervening piece of metal tubing, when the height will be only 18½ in. It will also readily be seen that by the use of one or more of the metal tubes, the height of the vase may be raised inch by inch to any extent between these extremes. In the same way, by an alteration in the distances between the flanged tubes, the dishes may be brought nearer to each other, or placed farther off from each other. Again, the dishes may be used with or without the rest of the vase, or the vase may be used with only one or with two dishes, or one or more of the dishes may be used on the foot without the top-piece. In short, the foot may be used without the top-piece, or with it at eleven different heights, and each dish may be used separately, or at ten different heights upon the foot.

When the dishes are arranged as shown in the sketch, loops of wire may be clipped over the edges of the upper dishes, and thus tall grasses may be made to stand erect amongst a lightly-arranged pyramid of flowers. But if a pyramid of fruit be wanted, it might be better to use the two flanged pieces without any tubes between them, in which case the three dishes would rest one just above the other. Supposing that a ring of Peaches were arranged upon the lowest dish, a ring of Nectarines upon the second dish, and a Pine or a few Plums upon the

top dish, then any one kind of these fruits may be taken from the group without disturbing the other fruits. I will not occupy your space with a description of any of the other numerous ways in which such a vase can be dressed with fruit, or flowers, or both, but will only add that I cannot too strongly recommend it, particularly to those whose selection of flowers is often very limited. These

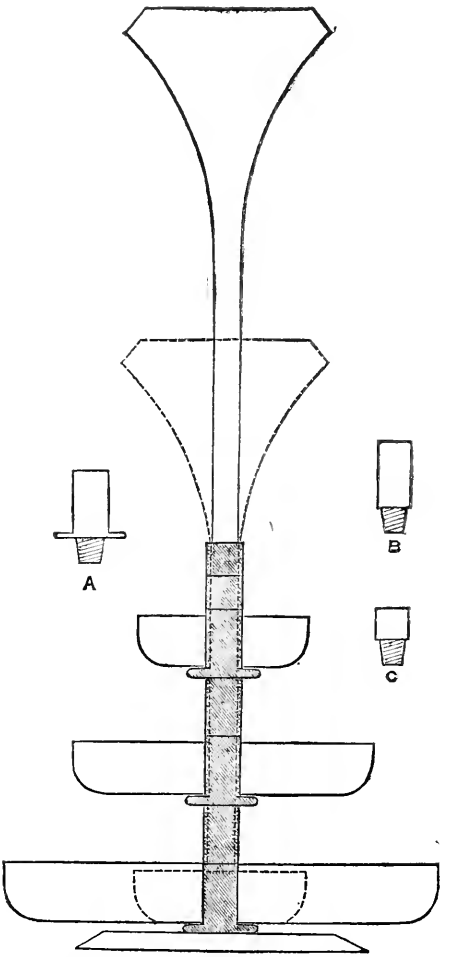


DIAGRAM OF FLOWER OR FRUIT VASE.

vases have been made from my drawings by Messrs. James Powell and Sons, of the Whitefriars Glass Works; and I gladly avail myself of this opportunity of testifying to their readiness and willingness in working out new designs, and to their patience and courtesy in troublesome matters of this kind.—W. T. (*in Gardeners' Chronicle*).

GARDEN GOSSIP.

EXHIBITIONS of *Rhododendrons* are to be numerous this year, partly in consequence, no doubt, of the favourable character of last season for the formation of bloom buds. Mr. Anthony Waterer, of Knap Hill, has his usual show of these plants at South Kensington; and the inexhaustible stores of the Knap Hill Nursery enable him also to make a grand show at Manchester. Messrs. J. Waterer and Sons, of Bagshot, hold a show at the Alexandra Park, instead of at the Regent's Park Botanic Gardens, where they have exhibited for many years past. At the latter place, the show is to be made by Messrs. Lane and Son, of Berkhampsted; whilst Messrs. Standish and Co., of Ascot, are furnishing an exhibition of the same character at the Lower Grounds, Aston, Birmingham.

—— FROM Studley Royal Mr. Clark reports favourably on the *Fruit Prospects*, in that part of Yorkshire fair crops of all the hardy fruits seeming probable. The frosts of February and cold north-east winds of March and April made sad work with the earlier blooms of Pears on bushes and pyramids, though on later sorts there is a very fair show of bloom, and on the walls Pears look well, and many are already set. Apples promise to give an abundance of bloom; while Plums and Cherries are very full. Bush fruits are very plentiful, and Strawberries are looking much better the last few weeks. Apricots on the walls are a very fair crop, and so are Peaches, though there have been no covers of any description put over them. The continuance of cold winds has brought a good deal of green-fly on the Peaches and black-fly on the Cherries, but a few syringings with a wash made of Elder and Walnut leaves will soon put these to rights. "I hope," Mr. Clark continues, "we shall have no such frosts this year as we had on the 19th and 21st of May last year, and which completely destroyed our Apple and Pear crops, and seriously injured the trees also. Altogether I consider our prospects of fruit crops this year are very good. Under glass most kinds of fruit seem to be doing well this year, as we are now getting a fair amount of sunshine. The Manchester Fruit Show would do something to meet the wishes of your correspondent, Mr. McIndoe (p. 109), if growers from all parts would bring samples with them, though I am aware September is somewhat early for Apples and Pears. It may be hoped that the frost of May 19 has not done serious damage.

—— ONE of the finest of all the hardy sweet *Violets* is that called *Lee's Victoria Regina*, of which leaves and flowers were sent to us in March last. It is a seedling from the Czar crossed with Devoniensis, the leaf being like that of the latter variety. The flowers are extremely large, deep violet-purple, with the petals evenly expanded. Mr. Lee mentions that last season he measured some flowers as much as $1\frac{1}{4}$-in. in diameter; this year they were affected by spring frosts. This variety is remarkable for its size and unusually perfect form. "I prize it," writes Mr. Lee, "as being the parent of quite a new race of violets, for out of some thirty seedlings I have not two alike, not even in leaf; some are much rounder than others; several have white centres, so that we may eventually hope for some with margins like pansies, and of several shades of colour, too." No doubt it is the finest of all the large-flowered single violets which has as yet been obtained.

—— WE observed during the past summer at *Osmaston Manor*, in Derbyshire, a pleasing variation of the *Bedding System*. There were some large raised flower-beds, with architectural edgings, and in planting these, Mr. Harrison had disposed his materials, which consisted both of foliage plants and flowering plants of the usual character, in groups of irregular form and unequal extent, averaging, perhaps, from 2 ft. to 3 ft. across, tall plants standing out in relief from amongst dwarfer ones, and bright colours being set off by the contiguity of appropriate foliage. The effect, from a happy balancing of flowers and foliage, was very good indeed, quite distinct either from that of the mixed border or of the bedding system, and yet affording to the eye the relief of variety without patchiness. The only kind of regularity observed consisted in the proper relative adjustment of those groups which were of taller stature, or more pronounced in colour than the rest. The plan is worthy of being followed up for the sake of the variety it affords.

—— MR. FISH writes that *Twin Peaches* seem more numerous than usual this season, and observes that it would be interesting to learn the probable causes

of their production :—"In our first peach-house I noticed, when going over the flowers with a camel-hair brush, probably as many as 15 per cent. of twins. They also abounded on the walls. Is the fact a sign of weakness? Simultaneously with this large proportion of twins, there was great weakness and imperfection of blossom this season. The flowers in many instances lack colour, in more, substance; they were thin and fragile, these qualities probably originating in the lack of sunshine and excess of rain last summer. Did similar causes produce the twins? There were also a few cases of triplets, and I have seen four peachlets from the same flower."

—— Among *New Bedding Plants* of which a coloured plate has lately been issued by Messrs. E. G. Henderson and Son, one of the most effective appears to be a tufted-growing yellow-leaved Thyme, which is designated *Golden Fleece Thyme*, and is probably the same as the *Thymus citriodorus aureus*, for which a First-class Certificate was awarded to them a year ago. The grey-leaved *Cineraria ceratophylla*, also a First-class Certificated subject, will be another useful plant in cases where white foliage is required.

—— Mr. Earley writes of *Dielytra spectabilis alba* :—How is it that such a lovely plant has not received a larger share of public recognition? The flowers are quite as large as those of the type, and are only very slightly tinged with rose at the tips of the sepals, being, in fact, true whites, according to the usual gardening phraseology. If the habit be anything like that of the older kind, then the sooner this variety becomes better known and more abundant the better.

—— The *Endurance of Orchid Flowers* is one of the great recommendations of many of them. Mr. Baines exhibited on May 7th, a spike of flowers of *Phalænopsis Schilleriana*, still fresh, which had been expanded on Christmas Day last. The plant of the Phalænopsis, which was a strong one, had made its growth in a brisk heat, and was removed, when it threw up its flower-spikes, into a house, the night temperature of which was not more than 50°, with a rise of 5° by day; and it was kept during the winter in the same house, at a similar temperature. The flowers, when newly opened, were many shades deeper in colour than the deepest of those bloomed under the usual conditions, and were also somewhat under the ordinary size.

—— A correspondent of the *Gardeners' Record*, writing from the west of Ireland, gives the names of certain *Pears that withstood the late severe weather*, namely :—*Louise Bonne*, of Jersey, a most prolific Pear, forming a fine pyramid; *Williams' Bon Chrétien*, *Citron des Carmes*, *Colmar d'Été*, *Dana's Hovey*, *Doyenné d'Été*, *Joséphine de Malines*—all pyramids, and bearing good crops. As bushes, he adds, I know of no Pear so heavy a cropper as *Beurré de Capiaumont*; we have also *Léon le Clerc de Laval*, *Poire d'Avril*, and *Verulam*, the latter a very abundant cropper. Our greatest failure has been *Duchesse d'Angoulême*; *Duchesse de Bordeaux*, *Baronne de Mello*, *Conseiller à la Cour*, and some others, have also suffered much; and *Winter Nelis*, on a wall, had its bloom and the points of the young shoots completely blackened. Covering was withheld from all the sorts named, in order to test their hardiness of constitution.

—— The collections of *Cyclamen persicum* from Mr. Little's garden, shown at the spring Horticultural meetings, appeared to sum up all that has been found novel and distinct in this flower during the past few years, since they showed evidences of the greatest care in breeding and selection. One named *Violette*, a very free-bloomer, had the base of the petals of a clear violet-rose, passing into rosy pink at the extremities; *The Gem* had bold, stout, pink flowers, slightly flushed with rose towards the tips of the petals; that called *White Perfection* was remarkable, not only for the snowy whiteness of the petals, but also for their great breadth and substance; while a double white flaked variety named *Fantastic*, which had a circlet of petals issuing from the mouth, and was curious, may produce a progeny in which the double form will be better developed.

—— In reference to the *Scotch Thistle*, Mr. Edwin Lees writes to the *Gardeners' Chronicle* thus :—The Thistle that has been planted round the grave of Burns in Dumfries as the Scotch Thistle is indeed *Onopordon Acanthium*, and

this species, from its tall and stately growth, is generally carried in masonic processions in Scotland; but Dr. Johnston was informed by an old mason that initiated gardeners well understood the Milk or Holy Thistle (*Silybum Marianum*) to be the true plant, and they therefore usually stuck the heads of the latter on the strong spines of the Onopordon. This appears decisive of the matter, and though *S. Marianum* may not be a native of Scotland, Professor Balfour states that it is now found about the ruins of castles, in whose gardens in the North it was formerly cultivated.

GARDEN WORK FOR JUNE.

FLOWERS.

NEWLY-PLANTED flowers must be encouraged to make free growth, for the great object is to clothe the beds as rapidly as possible; and thick planting and liberal culture are the best means of promoting early clothing. The latter consists in rich mulchings of the surface when praeticable, and liberal waterings of weak manure-water; this quickens as well as stimulates. One of the best adjuncts to a flower garden is an open copper of large dimensions, easily heated and kept hot. Give no water under 80°; then break and fresh-mulch the surface immediately after the watering, and note the effect on growth. Unless one has a shallow open tank or pond in the sunshine to get warm water from, one of the surest modes of fostering bedding-out plants is to keep the pot boiling to supply them with warm water. See, too, that the plants are pegged or staked firmly to one spot; this saves the tops from breaking and the roots from rupture. It is well, however, to keep a stock of reserve plants, for filling up blanks in beds or borders, instead of clearing them all off to hungry beggars or importunate friends.

In the mixed border attend to the tying-up of *Dahlias*, *Hollyhocks*, *Phloxes*, *Pentstemons*, &c. Take up bulbs as the leaves decay, and fill their vacant places with annuals, such as reserves of *Zinnias*, *Marigolds*, *Stocks*, *Asters*, &c. Cuttings of *Double Wallflowers*, *Rockets*, &c., may be inserted on a shady border, and early-rooted cuttings and layers of *Violets*, *Forget-me-nots*, *Arabis*, *Aubrietias*, *Alyssums*, &c., planted out in the reserve ground or in the mixed border. *Brompton* and *Intermediate Stocks* should also be sown. *Roses* should be budded as soon as the bark will run—on any stock on which Roses thrive best in the district. In those unfortunate places where many Roses decline to grow on either the Manettii or the Dog-Rose, seedling or otherwise, watch for free-growing roses of any variety, such as Auguste Mie, Charles Lawson, and Coupe de Hébé, strike them by wholesale, and work other roses upon them; by such election of stock the chances of success are enhanced. Thin the buds; shade prize flowers; and early in the month, or rather late in May, give the swelling buds a running taste of guano. Hunt to death the green caterpillars, grubs, green-fly, and other vermin that delight to feed themselves fat on the leaves and buds of Roses.

The plant-stove and orchid-house will soon have reached the crown of the tidal wave of life and growth; heat, moisture, and light will be exerting their maximum forces, and growth will be rapid, and it ought also to be strong. As the beauty of fine-foliage plants, and, indeed, of most others, consists greatly or wholly in their leaves, great care should be taken not to injure nor mark them in any way. This is often done by the itching fingers of thoughtless visitors, but a hint to the fair admirers ought to suffice. Shift any plants that require it, and look out for the first thrips, or scale, or bug, for by crushing these we save the plants, mayhap, from ruin. Attend to climbers on the roof, and keep them thin, and artistically trained.

The conservatory and greenhouse will probably soon be emptied of their hard-wooded occupants, excepting *Camellias* or *Azaleas* making their growth, and will

be filled mostly with *Pelargoniums*, *Fuchsias*, &c.; keep these carefully trained and in free growth. *Heaths* out of doors should be shaded from the sunshine two hours in the middle of the day, and care must be taken to place all choice hard-wooded plants on a worm-proof floor out of doors. Water with care, and never trust to the rain to water pot-plants in the open air. Sow *Herbaceous Calceolarias* and *Cinerarias*. Gather the seeds of *Myosotis*, *Pansies*, and *Auriculas*. Shift *Chrysanthemums* into rich compost; water with manure-water, and place them full in the light to make a strong growth.—D. T. Fish, *Bury St. Edmund's*.

FRUITS.

In-Doors.—*Pine-apples:* When the fruit begins to colour, water should be gradually withheld from the plants; give them a tolerably high temperature, with full exposure to light, and a free admission of air. Give all plants swelling off their fruit liberal supplies of liquid manure. The plants intended for the autumn supply will now be showing fruit, if our previous directions have been carried out; those that are not showing fruit should be kept dry for a short time, which, with full exposure to the light, will in most cases cause them to show fruit. Shift at once into their fruiting pots, if not already done, all plants intended for winter and spring fruiting; give them a steady bottom-heat of about 85°, plenty of air, and all the light possible; by these means you will get strong, stiff plants, which will be almost certain, under favourable circumstances, to bear fine fruit. Shift succession plants any time they may require it.—*Vines:* The Grapes in the early house will now be ripe, and should have plenty of air both day and night. Pay every necessary attention to the succession houses; where the fruit is swelling give air early in the mornings, and close up soon in the afternoons, keeping up a moist, healthy atmosphere by well wetting the paths and borders. Keep fire-heat to the late houses whilst the Vines are in flower. Attend to the timely thinning of the berries, and to the stopping of the lateral shoots.—*Peaches and Nectarines:* As the fruit in the early house will now be ripening, the atmosphere must be kept drier, and plenty of air should be given both by day and night. Remove or bend down any leaves that shade the fruit, that it may get the full influence of the sun on it. Much watering will not now be necessary, but the trees in the inside borders must not suffer for want of it. In the succession houses keep the atmosphere moist by well wetting the borders and paths, and by syringing the trees once or twice daily, otherwise it will be difficult to keep them clear of red-spider. Keep inside borders well watered. Attend to thinning, stopping, and tying-in the shoots.—*Figs:* When the first crop of fruit is cleared off, pay every attention to the second, which at this stage may be lost by a little neglect. Give trees in tubs and pots good supplies of liquid manure, and keep those in the borders well watered. Syringe the trees daily to keep down the red-spider, and admit air freely.—*Melons:* Maintain a proper bottom-heat; keep the shoots thin; water freely, and give a free circulation of air; earth-up and train succession crops; plant out for a late crop.

Out-Doors.—Disbud, stop, and commence training all kinds of *Wall trees* during the month. *Peaches*, *Nectarines*, and *Apricots* should be attended to without delay; stop and remove all shoots not wanted, and nail or tie in the young shoots as soon as they are sufficiently long. Attend to the thinning and stopping of the young shoots of *Plums*, *Cherries*, *Pears*, and *Apples*. Look sharply after insects, which will now be troublesome. Two or three good syringings with tobacco-water will soon clear the trees of green-fly. Caterpillars are sometimes very troublesome in *Pears* and *Apricots*, as they curl up the foliage and injure the young fruit; they should be carefully looked after when they appear,

and picked off and destroyed. The thinning of the fruit should be attended to in time, when they are set too thickly; give the trees a good washing with the garden engine two or three times a week. The ends of the young shoots of *Gooseberries* and *Currants* are very subject to the attacks of green-fly; as soon as they are detected give the trees a good syringing with tobacco-water, and keep all newly planted trees well watered and carefully mulched. Give *Strawberries* liberal doses of liquid manure.—M. SAUL, *Stourton, York.*

VEGETABLES.

SUCCESSIONAL sowings must now be made of various kinds of *Salads,* especially of *Endive* (both the curled-leaved and Batavian or lettuce-leaved types), *Lettuces*, &c., for the early autumn supply. The latter kind of *Endive* will be found to heart-in well for such purposes as mixed salads, &c., wanted during the early winter, and a breadth should be grown on accordingly. Where the young plants of earlier-sown *Chicory*, grown for a winter supply, have come up irregularly, it will be desirable to transplant as many as possible on to an open space singly; in this way they will make fine large roots for forcing. Further sowings must likewise be made of *Broccoli*, such as Grange's Late White, Alexandra, Lauder's Protecting, Late White Goschen, Leamington, Snow's, &c., which will afford a later successional supply next spring than can be expected from previously-sown plants. *Marrow Peas* of the tall-growing sorts should also be sown for the last time this season; also *Broad Beans*, *French Beans*, &c. Where a large demand for *Herbs* exists, and where there is no very great amount of glass, it will be found advisable to sow *Sweet Basil*, *Chervil*, and *Purslane* upon a warm border in the open ground; *Parsley* should also be sown now for a permanent winter supply. These sowings, suggested as the last of the season, should be made about the middle of the month. With the first shower in June, many kinds of *Tender Annuals*, *Herbs*, *Greens*, *Brussels Sprouts*, &c., will need transplanting to their permanent winter quarters; this operation should never be delayed in any instance when the aid which superficial rains afford can be secured.

Prepare trenches for the early *Celery*, which will need a more abundant supply of manure at this period than is absolutely necessary later, the preparation of the ground being also deeper in consonance therewith. The first rows of *Celery* are generally planted upon vacant ground following the earliest crop of Peas. In the preparation of the ground for this first crop, it will be necessary to make the trenches wider, as is well understood. Towards the end of the month make sowings of *Turnips* and *Spinach;* the former is likely to come in for a very useful crop, and the latter may afford a supply, if a moderately damp week follows its germination. In regard to the general routine, keep the soil constantly loosened amongst crops to prevent too free an evaporation of moisture. Plant *Vegetable Marrows*, *Ridge Cucumbers,* and *Gherkins*, also *Chillis* upon prepared beds formed of any kind of coarse materials that will, by fermentation, afford a slight degree of heat, placing thereon an abundance of soil in which the roots may grow freely. When good crops of Vegetables are sought, it will be necessary to keep the water-pot going freely amongst them during all continued periods of drought.

Cucumbers and *Melons*, in frames, must now have less artificial heat and more air than was necessary previously. Give to each a moderate supply of night air, and attend, by anticipation, to their proper training, rather than, as is too frequently the case, allowing them to grow densely together and then setting about putting them right. A regular system of watering must be followed in regard to each. They require slightly damping down daily, but the surface soil should not be kept constantly damp; abundant waterings should be given periodically, so that they do not become too wet.—WILLIAM EARLEY, *Valentines.*

Madame Cecile Berthod Rose

P. L. Mactariane Del et Lith.

TEA ROSE MADEMOISELLE CECILE BERTHOD.

WITH AN ILLUSTRATION.

OUR illustration of this pretty new Tea Rose is drawn from a specimen furnished from the collection of Mr. W. Paul, at Waltham Cross. The variety has been shown at some of the Spring metropolitan exhibitions, and won a First-class Certificate, being, as we think, very deservedly rewarded. The rose is of good free habit, blooming abundantly, and the flowers are large and full, of a fine pure sulphur-yellow colour, the backs of the petals being almost white. Our collections of Tea Roses have received some very useful accessions during the last year or two, and amongst the novelties thus obtained we believe the variety now figured will be found to hold a foremost place, and will not disappoint those who cultivate it.—T. M.

ROSES AND ROSE-CULTURE.

Chapter XVII.—Old Roses.*

OLD Roses! how charming the sound! what pleasing associations are bound up in those words! At memory's bidding, hundreds of almost forgotten favourites slowly emerge from the dim haze of the past, conjuring up visions of pleasant scenes, and awaking joyous reminiscences. Kind old friends, now sleeping beneath the clods of the valley, revisit us in the pleasures of memory, and discuss with us the properties and merits of the respective flowers. It is surely good to cultivate flowers in early life, if only for the sake of the retrospect. As we look backward, so much that is fresh and bright—may we not add, even endearing?—still hovers around those idols of the past. Yes, the remembrance of those familiar old flowers is sacred and indelible; their sweetness and beauty fancifully exaggerated a thousandfold by the talismanic touch of youthful associations. Is it, then, to be wondered at that we should love these old favourites, cherish them, plead for them, nay, if needs be, zealously fight for them, against the ceaseless innovations of modern times? But in this battle let us take heed lest we degenerate into mere party combatants; let us not lose sight of truth, but remember that this is a world of progress, as well as of change.

It is now more than four hundred years since the Red Rose and the White Rose were made famous in history as badges of the contending factions of York and Lancaster, and we find in the oldest books on gardening a place of honour assigned to the Rose. John Parkinson, in *The Garden of Pleasant Flowers,* published in 1629, devotes ten pages of a folio volume to its description. He tells us that he has "thirty sorts at the least, every one notably differing from the other," exclusive of wild sorts having "no beautie or smell." From the article on Roses in the seventh edition of *Miller's Gardener's Dictionary*, published in 1759, we should infer that little improvement had taken place in this

* This chapter on Old Roses was written originally for the *Rose Annual*, but as that work is nearly out of print, and will not be reprinted, the writer has thought it desirable to include it in the present series.

flower since the days of Parkinson. But we can only conjecture on many matters in that era of gardening, and we wisely and dutifully descend to the region of facts.

If we look at the thirty-eight groups of Roses described in the *Rose Garden*, we shall find that the prototypes of the following were known to English cultivators at the close of the last century:—The Boursault, the Double Yellow, the Scotch, the Damask, the Provence, the Pompon, the Moss, the French, the Alba, the Sweet Brier, the Austrian Brier, the Ayrshire, the Evergreen, the Macartney, the Four Seasons, the Damask Perpetual, the Crimson China, the China or Monthly, and the Musk. It must not, however, be inferred that the varieties of those groups now cultivated in our gardens were the varieties cultivated then; on the contrary, many of our best present kinds are of recent origin. We speak only of the original forms, and it will be seen that no less than nineteen groups, or one-half of those at present known, were then represented. Sundry hybrids, too, as Hybrid China, Hybrid French, and Hybrid Musk, if not strongly marked, were doubtless then in existence. Following the stream of time, we find that, in 1804, the Multiflora Rose was brought from China, supplying the desideratum of an elegant deep-coloured Climbing Rose, flowering in clusters. In 1807 the White Banksiæ followed from the same country, although it was twenty years later before the yellow one was introduced. In 1810 China also furnished us with the Fairy and Blush Tea-scented; and in 1824 with the Yellow Tea-scented. Nor must we overlook those valuable groups, the Noisette and Bourbon; the former of which was introduced in 1817, and the latter a few years later; while in 1827 came the Microphylla from China, and in 1830, the Prairie Rose from America.

At this period, and even some years later, the literature of the Rose was botanical, pharmaceutical, historical, bibliographical, poetical, in short, everything but practical. The Summer Roses held undisputed sway. Well, we remember, in our early school-days, sundry large beds of French Roses, some of them but very recently surpassed in brilliancy and sweetness. Every surrounding object was cast into the shade for the brief period at which they bloomed. How delightedly we gazed on them, gaudy as they were! The classic page, too, was often recalled by memory, as we sought out Achilles, Antinous, Cyrus, and Hippocrates. And often did we amuse ourselves by questioning the fitness of the garments in which such notables stood arrayed,—an emperor in dingiest garb, a philosopher in purple or scarlet. The number of French Roses was then legion, many of them as much alike as peas in a bushel. The stars of the day were Cocarde rouge, Grandpapa, Pharericus, Princess Victoria, Enchantress, Buonaparte, Celestine, and others long since lost and forgotten. True, the old Moss and Cabbage Provence were then, as now, pre-eminent, but there were only a few rose-coloured Bourbons, and no Hybrid Perpetuals; the Four Seasons, Damask Perpetual, Noisette, and China, were the Queens of Autumn out-of-doors; the Tea-scented being generally confined to the greenhouse.

Such was the condition of the Rose in England some thirty-five years ago.

As we ventured to look from this point, and speculate on the future, how much we saw awaiting the hands of the improver, though in all our aspirations we were far from anticipating the realisations of modern cultivators. The imagination never reached a degree of tension which enabled it to descry in Hybrid Athelin the Rose la Reine, or the Gloire de Dijon in the Yellow China. But here we come to the practical.

The French gardeners had already experienced enough to urge them forward in the work of crossing the various groups and varieties the one with the other. The group Hybrid China had increased and improved rapidly; then arose the slight variations, Hybrid Bourbon, and Hybrid Noisette, the Perpetual Scotch, Perpetual Moss, and last and greatest, the Hybrid Perpetual. The latter, now the most valuable group in our gardens, is due principally to the crossing of the Hybrid China with the Damask Perpetual; in fact, they may be called Hybrid China Roses, blooming both in summer and autumn. The first strongly-marked variety, Princess Hélène, was raised by M. Laffay, of Bellevue, near Paris, who afterwards raised Madame Laffay, La Reine, Duchess of Sutherland, and many others. Entirely new ground was broken here, and the harvest proved abundant. Other groups were drawn thence, the Rose de Trianon, Rose de Rosomène, and Bourbon Perpetual, possessing distinct features, but which may be regarded as mere off-sets from the Bourbon and Perpetual. During this time the Bourbon Rose, too, had proved wonderfully productive. Originally a small, almost single, rose-coloured variety, it gradually produced large double flowers of almost every shade of colour. Onward, a little onward, and the Persian Yellow Rose was introduced from Persia, through the Horticultural Society of London, while the Solfaterre and Cloth of Gold came from the west of France. It will be seen that in this brief sketch we have had no wish to depreciate "Old Roses." Why should we? We confess to loving them much. But if there must be a contest for the palm of beauty between the new and old, our judgment, after divesting the question of bygone associations, pronounces audibly in favour of the new. We have no faith in the theory that the Rose has reached its culminating point, and that henceforth no improvement worth regarding need be looked for.

Is it not more reasonable to assume that, while every season—even to the latest—yields something new to delight and surprise us, we may still look forward hopefully to the next? But we shall endeavour further to substantiate this view when we come to speak of "New Roses."—Wm. Paul, *Paul's Nurseries, Waltham Cross, N.*

NEW VARIETIES OF HIBISCUS ROSA-SINENSIS.

FEW finer flowering plants are to be met with in our collections of stove plants than that whose name heads this article. It is, moreover, like its congener the beautiful but neglected hardy Althea frutex, very prolific of varieties, and some remarkably fine ones have been recently introduced from the

South Sea Islands, by Mr. Bull, to whom we are indebted for the use of the two accompanying woodcuts.

HIBISCUS ROSA-SINENSIS FULGIDUS.

H. rosa-sinensis fulgidus is remarkable for the size and rich marking of its brilliantly-coloured flowers. The leaves are broadly ovate, with coarse teeth; while the flowers, which measure 5 in. across, are composed of broad rounded undulated petals, of an intense carmine scarlet, the lower part of each petal being

HIBISCUS ROSA-SINENSIS PUNICEUS.

somewhat paler and rosy-tinted, and marked with an oblong spot of the richest deep crimson, forming a blunt-rayed central star. This is certainly one of the finest varieties, perhaps the very finest, yet seen.

H. rosa-sinensis puniceus is of a different type, but equally desirable on account of its dense close-growing habit, and the profusion of its neat compact double flowers. The leaves are rather small, ovate, and toothed; and the flowers form a rosette of about 3 in. diameter, the wavy petaline bodies which make up the centre being about 2 in. deep, and elegantly crisped. The colour in this case is a bright dense crimson, very showy and attractive.

Two other remarkably fine varieties have been obtained from the same source, namely, *H. rosa-sinensis carminatus perfectus* and *H. r. miniatus semiplenus*. The first has large flowers, nearly five inches across, of a remarkably fine shape, and of a rich, soft carmine-rose, with a deep crimson eye; while the second has semi-double vermilion-scarlet flowers, four inches across, the central petals abounding in fantastic curves, and forming an irregular undulated mass, remarkable for the absence of formality. They are both good additions.

We may here just allude to the two pretty variegated forms of the plant now met with in gardens. One is called *H. Cooperii*, and has the leaves charmingly marbled and variegated with pink and white; the other, called *H. r. albo-variegatus*, has the leaves variegated in a similar manner with white.—T. M.

PAULOWNIA IMPERIALIS FOR THE SUB-TROPICAL GARDEN.

N the south-west of Great Britain this tree is quite hardy, and produces its beautiful lilac flowers in abundance. Wherever it succeeds, it is one of the most noble and remarkable subjects we possess, its bold, distinct foliage contrasting so effectively with other types of vegetation. Its great merit in this respect is insufficiently known or appreciated, as it is very seldom met with, even in localities where it would succeed.

The Paulownia delights in a deep rich loam, with a thoroughly drained subsoil, so that the water stands no chance of hanging in the soil about the roots. It is also important that it is planted in a high, exposed situation, *i.e.*, one that is not overgrown by shrubs and trees. The plant must have full exposure to sun and air, so that every chance may be afforded for the maturation of the wood.

When once the trees become established, they are very rarely injured by frost, further than an occasional pinching of the tender shoots, which should be gone over with the knife before they break in spring, removing the blemished portions, and regulating the form and proportions of the tree. If it should happen that the branches have suffered severely, cut them freely in, and regulate the growing shoots in summer by frequently pinching back, so as to check over-luxuriance, which will quickly establish the symmetry of the trees. When this is neglected, they are apt to become one-sided, unsightly-looking objects.

Desirable as the Paulownia is, as a permanent plant, it is more particularly

my object to draw attention to its capability of producing bold effects when cut down annually, and kept to a single shoot. A group of the Paulownia, banded with the variegated Negundo, and edged with the purple-leaved Acer, forms an effective and charming combination. It is also appropriately used in association with sub-tropical plants, presenting quite an exotic aspect on account of its bold development, as, in common with other fine-leaved plants, it luxuriates in a highly-enriched soil. It requires, however, to be protected in winter with mulching, when annually cut down.

To be entirely successful with them, the first season they are planted, they should be procured in pots, one year old from the cutting, as they are plants that do not relish being lifted and disturbed at the root, on which account nurserymen generally keep a portion of their young stock in pots. Young plants are the best to start with for the purpose indicated. They are so freely propagated from cuttings of the roots, that pieces 3-in. or so in length, put in during the early spring, into single pots, in a light sandy soil, and plunged in bottom-heat, will quickly start into growth, and if potted on and hardened off by degrees, will make fine plants by bedding-out time.

Why, then, with such simple means of cultivation, should we be debarred the dignity this noble plant affords, when with so little labour and care it may be placed within the reach of the most humble cultivator? A few well-disposed groups even in mixed shrubberries in cold localities would produce a very pleasing effect. The general aspect of our shrubberries is, upon the whole, too formal and sombre, and would be vastly improved by being broken up with a freer combination of deciduous plants having remarkable foliage, such as the *Ailantus*, the *Acers*, *Catalpa*, *Gymnocladus*, *Robinias*, &c., as well as the many varied types of tree form. The more abundant use of flowering plants in such situations would also be advantageous.—G. WESTLAND, *Witley Court*.

AQUATICS.—CHAPTER X.

ONE would hardly suppose that the *Ranunculus Lingua*, or Great Spearwort of the old Herbalists, had anything to do with the Crow-foot fraternity, till the flowers appear, when it at once becomes evident that it is a veritable Buttercup. It is a British subject, and is not unfrequently met with in marshes, and near the margins of lakes in various parts of England and Scotland, also in Virginia; it generally grows from 3 ft. to 5 ft. high, having smooth cylindrical hollow stems, bearing almost entire lanceolate leaves from 5 in. to 8 in. long, and nearly 1 in. broad in the middle, and terminated by a loose panicle of glossy bright yellow flowers, which continue to appear through the greater part of the summer.

It is a very imposing plant for the margins of ornamental water, and although it belongs to a numerous and varied family, still upon carefully reviewing them individually, one can hardly consider any of them worthy of note as aquatic plants except this, and the *R. aquatilis* noted below. The prevailing colour of the flowers

in this large family is yellow. The exceptions are *R. amplexicaulis* of the Pyrenees, a neat white-flowered sort, which grows about 1 ft. in height, and of which we may have something to say when we come to treat of swamp plants; the *R. nitidus* of Carolina, and the *R. aconitifolius* and its double variety, natives of the Alps, also white; and the *R. Lyallii* of New Zealand, not yet introduced, which has white flowers as large as a florin, and will, we trust, soon be found in cultivation. The *R. isopyroides* of Siberia, and one or two others, are also white, but hardly suitable for our purpose.

We now pass on to relate what we know of the modest *R. aquatilis*. It is a rather common British plant, and as dissimilar as anything can well be from the *R. Lingua*, the one attaining to nearly the height of a man, and the other lying flat upon the surface of the water. It begins to flower in May, and continues through the summer, almost covering the surface of small ponds by the wayside with thousands of its pearly-white blossoms. It has two sets of leaves, those that float on the surface being almost entire, while those that are submerged are finely divided. As soon as the petals drop, the branches gradually sink to the bottom, there to remain till the flowering time again comes round. There are some varieties to be met with, probably not of a very permanent character, the one merging into the other. One has been named *R. aquatilis multiflorus*, and produces abundance of bloom in a small space, the flowers being closer together than in the species. For the sides of ornamental water or for small tanks it is well worth cultivating, as it can readily be kept within bounds by being reduced annually to the dimensions most suitable for any particular locality.—W. BUCKLEY, *Tooting*.

PICEA NORDMANNIANA.

WHETHER in the young state, as we see it in this country, or in the matured condition in which it is shown in pictures of foreign scenery, this is a grand Fir-tree, probably the most valuable, all points considered, amongst the many new Conifers of the present century. Mr. Fowler, in some excellent papers on Conifers published in the *Gardeners' Chronicle*, remarks that, "as an ornamental tree, it has already been very extensively used, and in this respect is fast rising in popular favour; as a nurse or for game cover, it can scarcely be excelled; as a timber-producing tree, it is likely to be very valuable; its wood is said to be much harder than that of the Silver Fir."

It is a very hardy tree, of rapid growth, and though bearing a general resemblance to the Silver Fir, is certainly much handsomer, the leaves being of a fine, deep lustrous green, and the branches being thickly furnished with them, so that the tree always appears well clothed. One of its great merits as compared with the Silver Fir is, that it is not liable to suffer material injury from spring frosts, which so often disfigure early-growing trees, and the contrast between the dark green of the upper, and the silvery hue of the lower surface of the leaves, is very striking. It is a native of Northern Asia, and was first found in the

mountains of Adshar, above Guriel, a province on the confines of Russia and Turkey, and forming part of the ancient Colchis. The illustration, for which we

PICEA NORDMANNIANA.

have to thank Mr. G. Jackman, represents a healthy young tree growing in the Woking nursery. The rich green of *P. Nordmanniana* forms a striking contrast to the blue-green of *P. nobilis*.—T. M.

THE KAISHA APRICOT.

THIS variety of Apricot has with me proved, for the last two seasons, the hardiest in setting its fruit of any kind grown here without protection. In 1872 the *Moorpark*, *St. Ambroise*, *Orange*, and other sorts quite failed, but about half a crop was gathered off the *Kaisha*. This year, again, there is a failure in the Moorpark and others, but the Kaisha is bearing a full crop. The Kaisha does not grow so large, nor is so fine in colour when ripe as the Moorpark; but it ripens earlier, and is excellent in flavour either for the dessert or for preserving. Owing to the cold wet summer and autumn of 1872, the Apricots did not ripen their wood so well as in favourable seasons, and when the blossoms opened this spring they did not do so all at once, and showed weakness in setting the fruit, the Kaisha only excepted. I can, therefore, recommend this variety, for more extensive cultivation, owing to its hardiness in bad seasons. Another great property in its favour is, that the trees are not so subject to gumming or canker in the branches as the Moorpark and other varieties, especially on gravelly subsoils.—WILLIAM TILLERY, *Welbeck*.

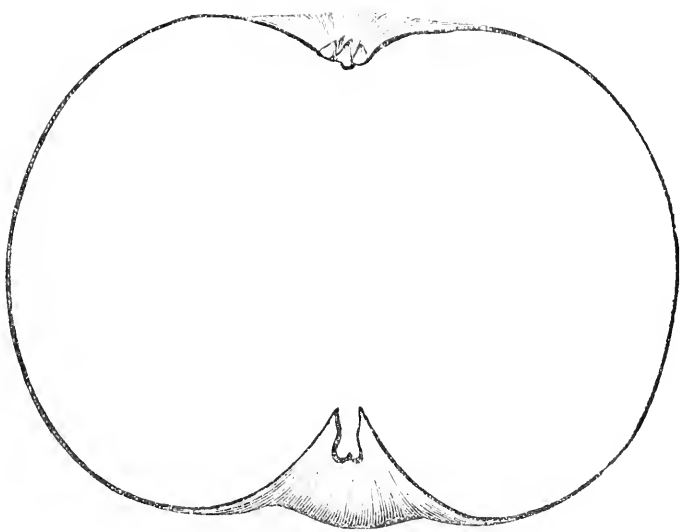
ONIONS AND CHIVES.

"BREATHES there a man with soul so dead, who never to himself hath said, This is my own"—my Onion bed? About one hundred generations back, we find the Onion mentioned amongst the productions of Egypt, and if ever this bulb could be said to be at home, it would surely be in Egypt, that land of mud, and sunshine, and ever-deepening soil, warped and irrigated by the mud and water of the Nile, and then roasted for months without rain. The Onion in its native habitat is more than half aquatic, being found in rich, deep soil, plentifully supplied with water; and wherever the Onion has attained to the greatest perfection, it has always been where the climate resembled the Egyptian type in sunshine and dryness, for it must be borne in mind that the feeders of the Onion tribe will descend to a depth of 6 ft. in moist or sandy soil after food, the whole family being voracious feeders. Of course everyone knows, or thinks he knows, how to grow Onions and Leeks; but if the thing is so easy, how is it that we see so many *stiff-necked* Onions and Leeks? In all my experience I have never seen the Leek form a bulb but once, and the gardener who grew these told me that when he exhibited a dish of Leeks, in the shape and of the size of white turnips, in Edinburgh, the leading men asked him what they were. It takes two years to grow Leek bulbs.

Again, in the affair of Chives, it is usual to cut off the tops and leave the little bulb in the ground untouched for years; but when Chives, top and bottom, are got up, and neatly divided and washed, they make the most gentlemanly Spring Onions that can be got, and are sure croppers, never outgrowing the size that all spring onions ought to be kept at.

But some one will say, "My garden lies high and dry, and I have no deepness

of earth. How am I to grow my Onions?" When Celery is well grown, we find the row of plants supported by a sloping ridge of earth, and their roots deeply buried in the moist manure that had been carefully placed in trenches for their support. Borrow this idea, for the Celery is not half-aquatic, like the Onion, but a genuine ditch plant, growing freely in stagnant water. In preparing land for Onions, begin by heavy layers of manure; and in order to get depth, lay one-half of the land on the top of the other half, and you will require less seed to crop your land, which will have twice the weight of large Onions on the deep soil that you would have had on the shallow. By making the bed one year where the alley was the year before, you will be able to use rough manure for the bottom layer, and make your Onion beds with very little expense. No one should ever trust to watering Onions; put in plenty of rich wet manure in March or earlier, and bid the sun shine fervently on both sides of your Onion bed, as well as on the top. If ever the sewage of London and other large towns is to be turned to permanent profit, it will not be by growing rank grass, but Onions.—A. Forsyth, *Salford.*



RED HAWTHORNDEN APPLE.

A VALUABLE kitchen Apple, remarkable for its size and earliness, since it comes into use at the end of August and the beginning of September, and as will be seen from the annexed figure, taken from the *Gardener's Year-Book*, is of large size. The tree is described as an excellent grower as a standard or espalier, but not suitable for forming into a pyramid. Dr. Hogg describes it as having the fruit large and oblate, with four very obtuse angles on the sides, the crown being flat, with only a slight depression in which the eye is placed. The skin is smooth, greenish-yellow, with a red blush next the sun.

The eye is small and closed, set in a shallow depression. The stalk is very short, placed in a very deep cavity. The flesh is white, tender, and juicy, with a sprightly and agreeable acidity. It is a valuable addition to the list of culinary varieties. —T. MOORE.

SUMMER CARPETING FOR ROSE-BEDS.

FOR many years I have allowed a plant called Oxalis to cover my rose-beds; it is a dwarf copper-coloured annual, with yellow flowers, and always sows itself and reappears in such profusion as to completely hide the soil, notwithstanding that the usual annual dressings are dug in. My rose-bed is on the site of an old greenhouse, and the Oxalis appeared the summer after it was removed and rose trees substituted; and it has reappeared every year since, —that is, 14 years,—and is now [June 9] just covering the bed with its pretty copper colour. In appearance (except as to colour) the plant resembles the shamrock, and I have never found it hurt the roses. Though tender in frosts, it is most tenacious of life, and reappears after the spring weeding as if the ground had never been hoed. I strongly recommend it for the purpose required by Mr. Fish, and shall be happy to supply him with a pot of it in the autumn. It seeds most luxuriantly, and a small patch on a rose-bed would, after one year's seeding, cover the bed. [The plant is the *Oxalis tropæoloides*, as it is called, a red-leaved form of *O. corniculata*.]—J. H. MALLESON, *The Hermitage, Higham, near Rochester.*

A TRICOLOURED RIBBON FOR FLORISTS.

AS no Royal head seems to move in the matter, I wish to establish a new Order of the Garter. The mode of constituting it shall be novel. I offer it to all who are worthy of it. But who is to elect the worthy? Well, I have anticipated that difficulty also, and will meet it thus. The worthy shall be those who shall take the trouble to procure the Garter. But where is it to be had, and how much effort is needed? Well, listen! Some years ago I was passing some cottage gardens. In the front garden of one was a plant of an uncommon Thrift; it was larger and brighter than any I had seen. I asked for a morsel, gave half-a-crown for it, divided it into single pieces, and placed it on a shady border. As soon as these single lines tillered they were divided again, and so till enough was made of it to run round the outside of the kitchen garden twice. That is the first stripe of the ribbon of glory.

The second is made of the old Saxifraga hypnoides. A plant of this went through a similar transformation till it formed the second band. Here were red and white, and now for the blue, Myosotis dissitiflora. Well, it is glorious in colour, but it flowered too early, for the other two had hardly reached the stature of the Saxifrage in blossom. Myosotis sylvatica answered, but some of it came white, and marred the beds of colour. I have never mustered enough of M. Impératrice Elisabeth to bed round the Saxifrage, and it has not mass enough to flower beside a white bed a foot wide. I saw a Lithospermum in Mr. Ware's collection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at the Alexandra Palace that might answer. But the best band consists of late plants of Myosotis dissitiflora. It takes, however, 28 inches to do this tricoloured ribbon of honour justice, and as this is more than I could well spare, I have struck out the blue this season, and formed the ribbon of two stripes only. I am hardly conscious of anything more cheering in the gardens of Florists, and so I venture to introduce the new Order of merit to your readers.—D. T. Fish.

THE PYRAMIDAL PEACH.

THIS plant is recommended in the *Revue Horticole* as a fine ornamental subject among small trees. Its shape is said to call to mind that of the *Populus fastigiata*, or Lombardy poplar, its branches being quite as erect as in that tree; and its large flowers, of a beautiful rose-colour, are borne in profusion. It is, however, still very rare, probably in consequence of its not being more generally known.

Whence comes this *Persica fastigiata*? asks M. Carrière, and he replies that it was obtained from M. A. Leroy, nurseryman of Angers. Whatever its origin, it is a very fine shrub, which, on account of its peculiar form, might be advantageously used for the decoration of shrubberies. It is a shrub of moderate growth, the branches very numerous and fastigiate; the leaves are deep green, very shortly denticulate, the glands reniform; the flowers are of a pale, fleshy rose; the fruits very downy, small, subspherical, and very slightly coloured. Though not to be recommended as a fruit-tree, this *Persica fastigiata* is well deserving of culture as an ornamental object.—M.

NEW PLATYLOMAS.

WITH AN ILLUSTRATION.

IN the accompanying plate will be found illustrations of two charming new dwarf greenhouse Ferns recently imported from California by Messrs. Veitch and Sons, and which we refer to the genus *Platyloma*, which for us includes many of the species called *Pellæa*, by other pteridologists. The distinguishing feature of the genus *Platyloma* is that the receptacles, which are continuations of the veins, form a series of closely set lines, more or less lengthened, at the edge of the frond, and placed at right angles with it, so that the fructification when mature forms by the effusion of these linear sori a broad marginal band—whence the name. This structure is manifested in various degrees,—for genera are mere human contrivances for purposes of classification—and in fact, the little lines of spore-cases are found shorter and shorter in different species, till the receptacle comes to be reduced to a single dot at the end of the vein, when the plant, if it has the involucral or reflected margin we are presuming to be present in all these cases, becomes a *Cheilanthus*. It is to the Cheilanthoid group of *Platyloma* (alias *Pallæa*) that our present subject belongs.

P. BRACHYPTERUM, as will be seen from the figure, is a very neat and pretty, as well as a distinct-looking fern. It grows 8-12 inches high, with rigid, erect,

bluish-green, linear bipinnate fronds, the pinnæ being short, and consisting of 7-9 spreading linear pinnules about ¾ of an inch long, or rather more. The stipes is dark chestnut brown, and the fronds are tufted on the decumbent caudex, the growing point of which is conspicuously scaly.

P. BELLUM somewhat resembles *P. brachypterum*, but though of the same erect, rigid habit, and having similar linear bipinnate fronds, it is more slender in growth, and has more numerous shorter pinnules. The fronds sometimes become bipinnate at the base, and the short ovate pinnæ consist of 9-13 narrow oblong linear pinnules half an inch long, the basal ones being occasionally forked, and sometimes ternate. The pinnules are drawn full large in the figure.

Both species will be well worth introducing into choice collections of greenhouse ferns, for though too small to compare for general effect with some of our well-known favourites, they will be found to occupy a prominent place amongst those which are characterised by neatness and compactness of growth, in this respect associating well with such ferns as *Nothochlæna nivea* and the smaller species of *Cheilanthes*.—T. M.

GARDENING FOR THE LABOURING POOR.

SOME benevolent gentlemen in Manchester have lately inaugurated a revival in floriculture among the dingy dwellings of the deserving poor, by providing, in the first instance, the means of cultivating the Hyacinth; the flower-pot, the bulb, and even the earth, have all been supplied by the benevolent donors, the only condition necessary to secure a pot or two for trial being *the wish* to succeed. This experiment is, indeed, floriculture under no ordinary difficulties, and whoever succeeds will soon be fit to be trusted with better things.

It is needful to introduce the element of profit into the revival, but let me first name a few experiments to encourage beginners. The late Mr. Loudon once showed me some Turnips, Carrots, Beet, &c., the roots of which, wrong side up, had been hollowed out, and in this state, top downwards, neatly suspended each by three strings. When they began to sprout, the leaves enclosed and hid the roots; and the plant with its cup of water continued to grow in the unusual fashion. The Turnip, the Red Beet, and the Yellow Carrot, when treated in this manner, became elegant drawing-room ornaments.

But utilitarians will regard this as unprofitable. Suppose, then, that the tyro in gardening becomes an amateur grower of Small Salading, trusting that by perseverance for the space of three weeks (the time hens take to hatch chickens) his salad herbs will then be fit for the table. Gentle reader, bear a little with the tyro and his instructor, for this experiment has to be done without field or garden, without earth or any kind of manure, and for at least two-thirds of the time without light. This last peculiarity is indeed the very heart and soul of the mystery. Take an ordinary dinner plate, value one penny, and as much rag, quite clean, and wet, as will just cover the bottom of it—woollen

rag, thin and old, being the best. On this rag, sow white mustard seed, thickly enough to nearly cover it. The rag must be kept wet, for the salad has to live by water, and yet it must not have stagnant water. It should be kept away from light, and in a warm place, and covered with, say, a piece of newspaper to keep away the dust. When the seeds have begun to grow, they will stick firmly to the wet flannel, and after they have fairly pushed into leaf they may have light enough to green them. When from 1 in. to 2 in. high, the salading will be fit for table, and should be neatly clipped off, so as not to get amongst it any mouldy seeds that may be at the bottom. When a person has grown one batch, and tasted the *greens* of his labour on his bread and butter, he will aspire to a square box, with soil as wet as bricklayers' mortar, and sow his cress or mustard on that. The box need not be more than one inch deep, but must be carefully kept moist, warm, and dark, until the salad gets fairly on its legs, and then it will bear the light to the end of its days, which will seldom number over seven, for 'young' and 'crisp' are the criteria by which to judge of salad herbs.

The Hyacinth culture is an excellent beginning, but the season of the Hyacinth is soon over, and I think that a few other cheap experiments added would break in beginners in the theory of plant life; first, by culture in water, then in earth; and always with a stimulus to profit by the work.—Alexander Forsyth, *Salford.*

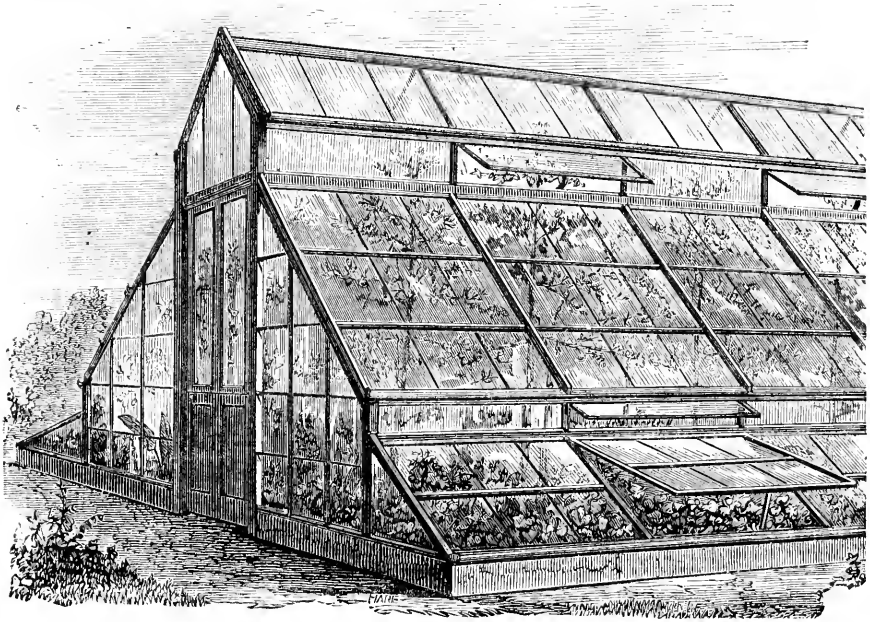
THE PENTSTEMON.

RAISERS of new *Pentstemons* have during the past ten years done very much not only to improve, but also to popularise this undoubtedly fine hardy plant; and English and Continental raisers alike have aided the work of improvement, and are abreast of each other in regard to the value of these products.

The *Pentstemon* is so accommodating that it will grow in almost any soil, but a good light loam, well enriched with leaf-mould and some well decomposed manure, will bring out with a rich fullness the superb beauty of this flower. The *Pentstemon* blooms abundantly from June to October, and when the autumn months are drawing to a close, the most cherished varieties can be lifted, and the plants wintered in a cold frame where protection can be given during frost, and with some fine siftings from the refuse of the potting bench placed about the roots. Cuttings of these should be made from the young growth in August and September, and wintered in store pots in a greenhouse. As seed of very fine strains of the *Pentstemon* can now be readily had, the grower should annually raise a few, and so seek as far as he can to improve his favourite flower. The seed should be sown in a gentle heat in February and March, placing it in pans in some light rich soil, and as soon as large enough to handle, the plants may be pricked off into pans, boxes, or pots, and encouraged to grow on as rapidly as possible. At the end of May they can be planted out, and it is always a good plan to make a bed of them, as they form very interesting objects during the summer months.—R. Dean, *Ealing.*

THE ALEXANDRA PLANT-HOUSE.

THE subjoined figure represents one of Rendle's Patent Plant-Houses, of new and elegant design, and most commodious in its arrangements, since the glass is carried out at the base so as to form a convenient pit for dwarf plants. It is called the Alexandra Plant-house; and is constructed solely of timber and glass, with the necessary metal grooves according to Mr. Rendle's system of glazing; it can, therefore, be put up without brickwork in the erection itself, and without putty in the glazing. The latest improvements in these



ALEXANDRA PLANT-HOUSE.

patented houses greatly facilitate their construction, since the timber is all prepared by machinery to a uniform pattern, and the glass is all of one size, and so fixed as to avoid the possibility of drip. In one of these houses of lean-to form, erected at the London International Exhibition for the growth of Tobacco plants in connection with the Exhibition, we had lately an opportunity of seeing on a rainy day how perfectly water-tight the roofs can be made. The glass surface is continuous, without exposing any external woodwork.—T. MOORE.

MIMULUS CARDINALIS.

THE rage after novelties—after anything new from beyond the seas—has caused many charming plants to be set aside; nay, has even lost us some of our most beautiful introductions. Lovely as are many of these plants, whose very names have become to us as "household words," can there be

any well-grounded excuse for our turning them aside? Look, for instance, at the want of merit in very many orchids of not very distant introduction: save as botanical gems, they are indeed poor by comparison; yet it is owing to such indifferent subjects as these and others, even after such comparison has taken place, that old, true, and tried favourites are discarded.

Such has been the case with the showy, fragrant, hardy, and adaptable Cardinal Musk, the scarlet blooms of which are likened in their brightness to the showy cardinal's hood, &c. The plant belongs to the hardy herbaceous border, and is very neat and effective from its pyramidal form, growing from 2 ft. to 3 ft. high, and laden with blooms. The foliage is large, hirsute, and with a powerful and distinct musk odour. The plants are well adapted for pot-culture also, its very graceful pyramidal habit, added to its brightly coloured blooms and fragrant foliage, with a very ready adaptation to the culturist's wishes, both in and out of glass structures, combining to make it essentially an amateur's plant.

Like the family of musk plants or Mimuluses generally, this plant will also thrive to perfection in a shady situation, and where a superabundance of moisture exists.—William Earley.

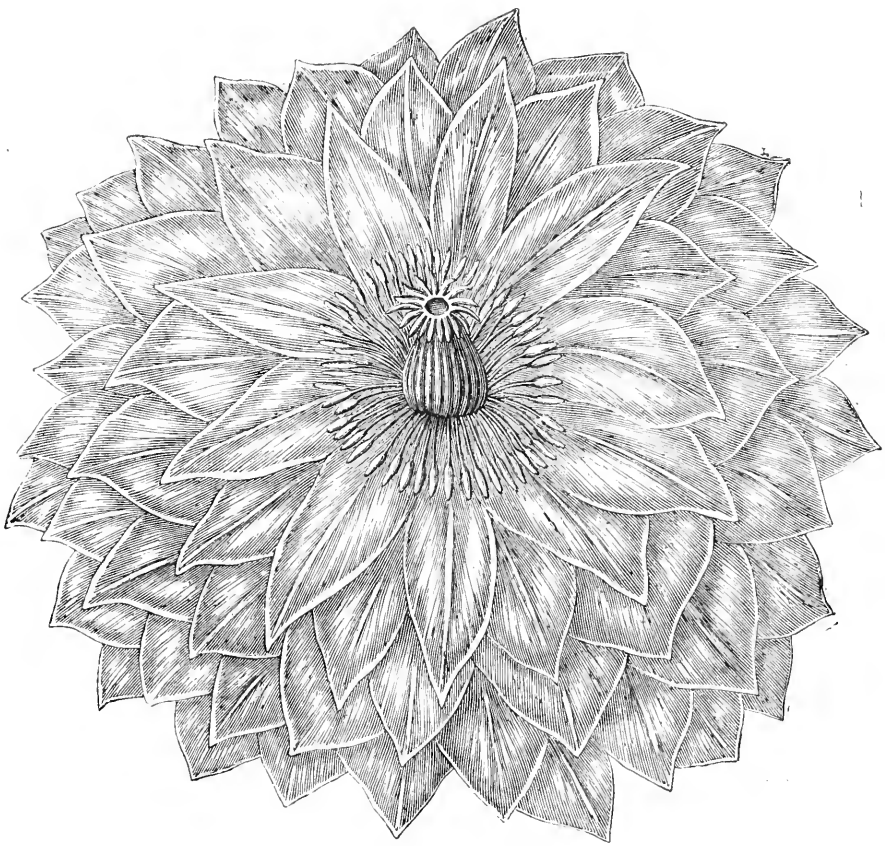
SEEDING THE STEPHANOTIS FLORIBUNDA.

HAVING seen some remarks in some of the gardening periodicals during the past autumn about this favourite sweet-scented climber producing seed-pods, I have thought, although it is a circumstance not altogether uncommon, that a short account of its having fruited on several occasions here, on plants managed under a cooler system of treatment than is generally given to this species, might prove interesting. We have three large plants which are kept for autumn-flowering; they are trained balloon fashion, and one is a seedling raised from seed ripened here. These plants are placed at the warm end of a plant-pit amongst orchids, and where the temperature seldom exceeds 40° through the winter. As little water is given during the dormant stage as will just keep them from flagging. When subject to this cool and retarded treatment, the plants, when in flower, bear removal to a sheltered corner in an airy greenhouse, and will thus keep in flower for a long time. It is always in this house that seed-pods have formed with me. On one occasion two pods were formed on one raceme, and ripened their seeds. I find the seeds take a long time in attaining maturity; a pod formed in August, 1871, was only gathered in November last, and the young pods were at that time as green and fresh as the leaves on the plant from which it was taken.—J. Webster, *Gordon Castle Gardens.*

CLEMATIS LUCIE LEMOINE.

WHEN first sent out this was said to be the best double white variety known, being purer in colour than the old C. Fortunei. It has been shown at several of the Spring shows, and though always in a weakly condition, so that its full merits were not brought out, yet the descrip-

tion given of it, so far as purity of colour was concerned, seemed to be borne out. The annexed figure, kindly placed at our disposal by Messrs. E. G. Henderson and Sons, gives some idea of the character of the individual flowers. The following is the account given of it in Moore and Jackman's recent book, *The Clematis as a Garden Flower*:—"This variety is of French origin, having been obtained by M. Victor Lemoine, of Nancy, from *C. patens* crossed with *C. Fortunei*. From the coloured figure and description distributed by the raiser, it would appear to have



CLEMATIS LUCIE LEMOINE.

the ternate leaves and cordate-ovate leaflets of *C. lanuginosa*, and double flowers, which in form are said to most closely resemble those of the variety named *C. John Gould Veitch*, but to be still more double and symmetrical, the individual blossoms measuring four and a half to five inches across, and when fully expanded reminding one of a double white *Zinnia*. They are quite white, and do not show the greenish tint which is seen in *C. Fortunei*." It is, no doubt, a fine double white Clematis.—T. M.

GARDEN GOSSIP.

RESPECTING the *Fruit Crops in Central Yorkshire*, Mr. Saul writes: "It is charming to find that after the long run of cold and changeable weather that we have had, the fruit crops are, with one or two exceptions, much better than could be expected. With the exception of *Plums*, the crops of other fruits here are satisfactory. Plums, with the exception of Victoria, are in general very light crops; we had very unfavourable weather at the time (the latter part of April) they were in bloom; one morning these trees were white with a covering of snow. *Apricots* are better here than I expected; there was so little bloom. I did not get the trees protected as usual, but the weather happened to be favourable while they were in bloom, the early part of April, and most of the blossoms set. I believe the frost of February injured some of the Apricot buds, but the check vegetation then received, has been probably the means of saving our other fruit crops. *Peaches* and *Nectarines* are very abundant. *Figs* also are abundant. *Pears* are a moderate crop. *Apples* are a good (at least they promise at the present time), but not over-abundant crop, as some kinds, Keswick Codlin amongst others, in some places, have not had much bloom; still I think there will be a good crop. *Cherries* are abundant. *Gooseberries* and *Currants* are very abundant. *Raspberries* here promise to be good, but I hear of the frost injuring the canes in some places. *Strawberries* are a better crop than they have been the last five years; Keens' Seedling has borne very indifferently here these last four or five years, so much so that I reduced my stock of it considerably. I did not think they were running out and becoming barren, but attributed it to the seasons, and in this I believe I was correct, as the whole of the plants are at the present time full of promise, and come up to former times; all the other kinds I grow are equally full of promise, and the crop will be abundant. *Nuts* will, I believe, be a very light crop. Altogether, I think we may feel very thankful after the trying weather we have had."

—— A HANDSOME *Memorial of Sir Joseph Paxton* has been erected in the grounds of the Crystal Palace, and was unveiled on the occasion of the 19th anniversary of the opening of the Palace. It consists of a colossal marble bust 8 ft. high and 4 ft. 6 in. at the base, carved in Carrara marble by Mr. W. F. Woodington. The pedestal is 11 ft. square at the base, and 31 ft. high, making the total height 39 ft. from the ground. The lower part of the pedestal is of Portland stone; the upper part being in Portland cement, in imitation of red porphyry. In the base it is intended to insert four slabs of Cornish serpentine, one containing a diagram of the principle on which the building of the Crystal Palace is constructed, and the other the following inscriptions:—"Joseph Paxton, born at Milton-Bryant, Beds, 3rd August, 1803; died at Rockhills, Sydenham, 8th June, 1865." "The Crystal Palace was opened by Her Majesty Queen Victoria on June 10th, 1854." And "Si monumentum quæris circumspice."

—— A CHARMING new double-flowered Bedding Lobelia, *Lobelia pumila grandiflora flore-pleno*, has recently appeared. The owners, Messrs. Dixon and Co., of Hackney, state that it was a chance seedling which originated from seed saved from the old Lobelia pumila grandiflora. The new kind, although growing no taller than the old one, is more robust, and keeps better through the winter—a point which is greatly in its favour. The flowers also remain in perfection much longer. This double form of *Lobelia Erinus* is an entire novelty both to florists and botanists, and promises to be an important acquisition, and very useful as a bedding plant.

—— THE name of *Adiantum Moorei* is proposed by Mr. Baker, for the pretty new Adiantum, discovered by Mr. Pearce in Peru, and sent home to Messrs. Veitch, of which an account, with a characteristic woodcut, was given in the FLORIST AND POMOLOGIST, 1872, 278, under the name of *A. amabile*. In using this name, Mr. Baker points out that the fact must have been overlooked that it had been already used up in the genus by Liebmann for a Mexican plant, which is fully described under that name in *Mexicos Bregner*, 113, published in the year 1849.

—— AMONG *Forced Flowers* for market purposes may be mentioned the *Narcissus poeticus*, of which a quantity is annually forced by Mr. H. Bailey, of

the Feltham Nursery. English-grown bulbs are used, a clump of twelve being put into a 32-pot in the autumn, and the pots placed in a cold pit. As soon as the shoots appear, the plants are placed in a gentle heat, and brought on slowly. The treatment is very similar to that used in the case of Lily of the Valley. The success in blooming depends on gentle forcing and a thorough ripening of the bulbs; the roots, moreover, flower better and more freely the second year of forcing.

—— THE *Gardeners' Chronicle* states that one of the finest specimens of the *Red Cedar*, *Juniperus virginiana*, to be seen in this country is growing at Bearwood, Wokingham, Berks, the seat of John Walter, Esq., M.P. This example is growing on one of the most elevated positions in the fine grounds of Bearwood, and is over 50 ft. in height, and of a dense symmetrical growth and handsome proportions.

—— A NEW *Fruit Fork* has been patented in New York. It is designed to afford a means of conveniently holding ripe fruit, so that in eating it the juice will not soil the fingers, or come in contact with clothes or carpet. It consists of a fork having a suitable number of prongs, of proper length and shape, which project from the middle of a bowl in which the liquid flowing from the fruit is caught. A handle is connected with the lower side or, if desired, with one edge of the cup. The fork may be made of silver plate of any tasteful pattern, and will form a very convenient and handsome article of table ware. The patentee is Mrs. Isbella C. Draper, corner of 106th Street, Third Avenue, New York.

Obituary.

—— MR. JAMES MITCHELL, of the Piltdown Nurseries, Maresfield, near Uckfield, Sussex, died suddenly on May 10, aged 65 years. Mr. Mitchell was a well-known rosarian, and was for many years a successful exhibitor at the leading metropolitan and local shows.

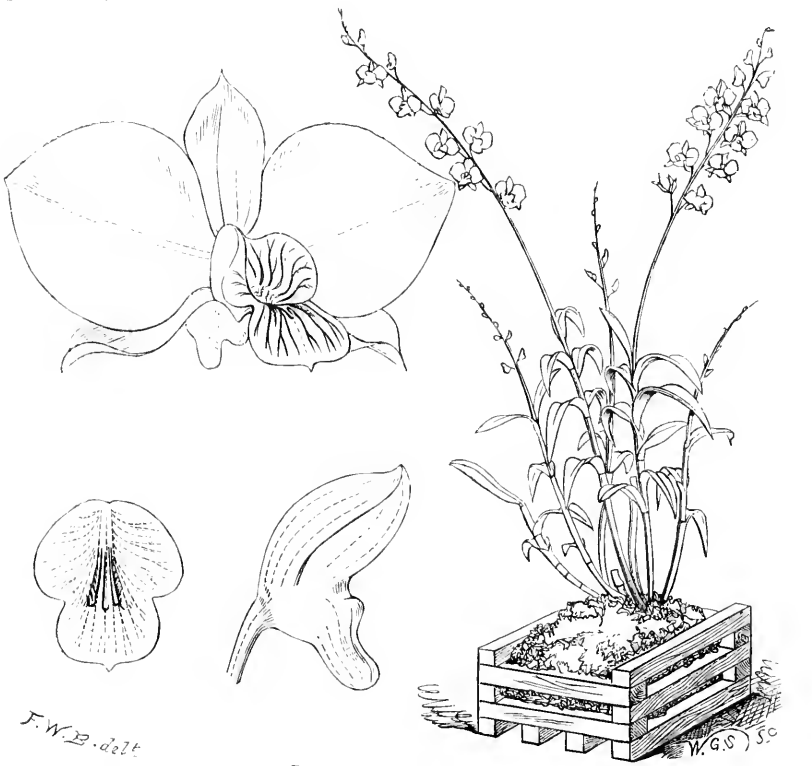
DENDROBIUM BIGIBBUM.

ALTHOUGH introduced to our gardens nearly twenty years ago, this distinct and beautiful orchid is still but rarely met with in even our best collections. Perhaps the finest example in cultivation is that of Dr. Ainsworth, of Lower Broughton, a most distinguished exhibitor of select orchidaceous plants, in which labour of love he finds a worthy assistant in his enthusiastic gardener, Mr. Mitchell. The accompanying illustration, taken from the plant in question, gives a correct idea of its habit and inflorescence, rendering description unnecessary. I will therefore pass on to glance at those climatic conditions under which it flourishes in its native habitats, and those found by experience to be the best for its vigorous development under cultivation.

The plant is a native of the north-east coast of New Holland; that is to say, it enjoys a tropical temperature, and not a temperate one, as some, who forget that the northern parts of countries or islands *south* of the equator are necessarily the warmest, might erroneously suppose. The plant in question is found near the coast, and consequently enjoys a more equable temperature, together with more atmospheric moisture, than is generally experienced by plants growing further inland.

Here in our orchid-houses it should be planted in a small wooden basket, and suspended near the glass, for if any one Dendrobe succeeds better than another

when fully exposed to the sun and light, this is the one. It will grow well enough when shaded, but in order to flower it well it must be fully exposed, more especially as its young growths approach their full development. Our plants here have been grown in the comparatively hot and dry temperature of a fruiting pinery, where their growth, though short, has been fully ripened; and it is no uncommon circumstance to see small bulbs three or four inches long produce flowers when so treated. Still, the longest pseudobulbs are produced in a moist, warm temperature. It will do well grown in a warm vinery or plant-stove, but should not be included in the "cool" list, or disappointment would in all probability ensue.



DENDROBIUM BIGIBBUM.

The best compost for this plant consists of lumps of tough fibrous peat, nodules of crocks, or a few bits of charcoal interspersed. The basket should be neatly surfaced with living sphagnum, and the plant carefully watered until thoroughly well established, after which it will require but little attention. When well grown it is a most profuse bloomer, flowering from the old back bulbs for two or three successive years. Dr. Ainsworth's plant, though a fine specimen, has only seven pseudobulbs, still it bore this year five spikes of glowing rosy-purple flowers, two of which were very fine when exhibited. One of the greatest draw-

backs to the general cultivation of this fine species is its rarity, and consequently, its price, for at present it is "worth its weight in gold," or even more than that, according to circumstances.—F. W. BURBIDGE.

GARDEN WORK FOR JULY.

FLOWERS.

THE beds in the flower-garden should be covered now, and it will have a freshness and a beauty probably hardly attained at any other period. With August we seem to see autumnal tints on the flowers, and the spirit of autumn seems to hover over, almost to threaten their beauty at times. But there is little or nothing of this in July. We have but to enjoy, to fix things in the proper place, to peg, to stake, to tie, to watch for weeds and out with them, and to help the plants by surface-stirring and thorough waterings when needed: and more than all, by frequent *pickings*. This last is the greatest secret of continuous and prolonged beauty.

In the mixed garden or border see that every plant, large or small, has its modicum of free space, and a speck of blue sky wholly to itself. Overcrowding is ruin and death to spring flowers or delicate herbaceous plants. How many charming Hepaticas, for instance, are ruined, killed outright, by a stout Marigold or fat Aster being set upon their crowns. And so of Gentians, dwarf Phloxes, Saxifrages, Aubrietias, Arabises, Alyssums, Primulas, Daisies, Violets, &c. The attempt to make a mixed garden or border all flower at once, robs it of half its beauty, and all its distinctiveness of character. Here we should see plants in all stages of growth, each cared for, none hidden up nor smothered by fast-growing annuals, nor wide-spreading bedding plants. Much tieing-up, training, hoeing, raking, trimming, and thinning of shoots will be needed to keep the mixed garden in order. The laws of height, distance, and proportion of growth demand due consideration in its arrangement and furnishing. *Carnations*, *Picotees*, *Pinks*, &c., are at home in the mixed garden, with Mignonette near to them, and should be layered, or pipings struck, towards the end of the month. *Pansy*, *Polyanthus*, and *Auricula* seed should be gathered when ripe. Those who grow seedling *Pinks*, *Carnations*, &c., should watch and weed out the worthless ones as they flower; many of them, though utterly worthless from the florist's point of view, are admirable for bouquets, even single selfs being extremely effective at times.

In the plant stove and orchid-house gradually begin to reduce the amount of shade, and to aim at maturity rather than extension of growth. Surface-rooting *Orchids* should be top-dressed with turfy fibry peat, chopped sphagnum, and potsherds. Stove plants in full beauty, such as *Clerodendrons*, *Dipladenias*, and fine-foliage plants, thoroughly rooted, may be much assisted by liquid manure. That much neglected old plant, *Quisqualis indica*, will now be in full beauty and fragrance on the roof; keep this and other roof-climbers to the roof. The *Bougainvillea glabra* is one of the most glorious plants to clamber a pillar, cover a roof or wall, or grow on a trellis in a pot. As a companion plant to the *Rivina humilis* on a pillar, allow me to recommend the *Bucelia violacea*, now known, I think, as *Phytolacca icosandra;* I have seen its bunches of black or dark violet berries from 1 ft. to 18 in. long. Pot off winter-flowering stuff such as *Poinsettias*, *Euphorbias*, *Begonias*, &c. Pot most of the greenhouse plants while the wood is partially matured. *Camellias* and *Azaleas*, if not potted when they went out of flower may be potted now, when their growth is completed.

See to the potting of Tea and other *Roses* intended for winter flowering. Shift *Cinerarias*, *Chinese Primroses*, and *Herbaceous Calceolarias*, as they require it,

and see that *Chrysanthemums* do not suffer from lacking water or from becoming pot-bound. The surface of the pots should be mulched, and the shoots stopped and staked, to prevent accident; the stopping, however, should be dispensed with if the plants are meant to produce show flowers.—D. T. Fish, *Hardwicke.*

FRUITS.

In-Doors.—*Pine Apples:* For fruiting plants the directions given last month must be attended to. Now, when the days are at their full length, and light at its maximum, succession plants should be grown on as rapidly as possible; ventilate freely during the day; water liberally all plants that have plenty of roots, and shift such as require it into larger pots; keep the bottom-heat steady and regular; syringe daily, and shut up early in the afternoons. *Vines:* As soon as all the Grapes are cut in the early house attend to ripening the wood, so as to bring the vines into a state of rest as soon as possible; remove all laterals; give the foliage a few good syringings; ventilate freely night and day, and if the weather be dull and cold, fire-heat will be necessary for a few weeks. In houses where the fruit is colouring, give abundance of air at all times; and in houses where it is swelling, maintain a moist growing atmosphere, by throwing water frequently on the paths and borders. Attend to stopping the laterals in the later houses, and give the berries a final thinning. *Peaches and Nectarines:* When the fruit is all gathered in the early houses attend to the ripening of the wood; give the trees a few good syringings, and let them have plenty of air, both day and night; spare no care to keep the foliage in a healthy state as long as possible, so that the buds may get properly formed, and the wood well ripened for another season. When fruit is ripening give abundance of air at all times, and in later houses where it is swelling keep the atmosphere moist by well wetting the borders and paths, and by syringing the trees daily, otherwise it will be difficult to keep the trees clear of red spider; keep the shoots neatly tied in, and remove all that are superfluous; give abundance of air. *Figs:* As the second crop of fruit will now be swelling fast, these should have plenty of water at the roots; plants in tubs and pots should have liberal supplies of liquid manure, and the syringe should be used freely, and a moist atmosphere kept by frequently well sprinkling with water the borders and pathways. *Melons:* Where fruit is ripening keep the inside of the frames or pits dry, and give abundance of air; attend to the plants that are swelling their fruit, and see that too many fruit are not left on any of the plants to ripen; earth up late crops, which must not suffer for want of water; pinch out all superfluous shoots, and see that the bottom-heat does not fall below 75°.

Out-Doors.—*Fruit Trees* must now have every attention paid to them, to secure well-ripened wood for next year. The stopping, thinning, regulating, and the nailing or tying-in of the young wood, and the destruction of insects, are the principal matters now requiring attention. Frequent and heavy syringings with the garden engine will do a good deal to keep down insects. In dry weather give *Apricots, Peaches,* and *Nectarines* a good soaking of water occasionally, and keep the borders well mulched with half-rotten dung. The red-spider is often troublesome on *Peach* and *Nectarine* trees that are on a dry, shallow soil. Remove all foreright shoots clean off *Apples, Pears, Plums,* and *Cherries* on walls, and nail in all the leading shoots. Espalier, pyramid, dwarf, and other trained trees should be treated similarly. Cover *Cherry trees* with nets to protect the fruit from birds. *Gooseberry* and *Currant bushes* should be gone over, and the greater part of the young wood cut away; this not only lets more sun and air to the fruit, but also benefits the wood and buds for next year. If any caterpillars appear on the gooseberry bushes dust them immediately with a little white Hellebore powder,

which will effectually destroy them. *Raspberry Canes* should be well thinned out. Make new plantations of *Strawberries*, and layer immediately into small pots as many runners as may be wanted for forcing next year; those that were layered last month, when sufficiently rooted should be potted into six-inch pots for the earliest forcing.—M. SAUL, *Stonrton, Yorkshire.*

VEGETABLES.

PLACE a good mulching of coarse manure over the beds whereon *Vegetable Marrows* and *Ridge Cucumbers* are grown, and give each very copious root-waterings; the mildew pest not infrequently attacks these, and should be met on the very first symptoms with the perfect antidote—a surface dusting with flowers of sulphur. *Cucumbers* and *Melons* in frames will need to have the heat renewed in the linings, if the weather prove in the least dull, and the nights at all cool. This is done by stirring up the old materials, and adding a little fresh thereto, slightly damping all, if it be at all dry in the bulk. A good soaking of manure-water should be given to such as have been growing some length of time. Keep such as are making free growth well pinched back at one or two joints beyond each fruit-blossom, and set the blossoms where necessary. Keep *Tomatos* fastened to the walls, and pinch back all unnecessary shoots, removing therewith any occasional large leaves which are likely to unduly shade the main growth. When these show for flower, and it is anticipated a crop is "set," then give them a thorough good root-watering with manure-water, and subsequently well mulch the surface soil immediately around the base of each plant with decomposed manure. *Capsicums* and *Chilis* must also be attended to in these respects.

Make now a last sowing of *Peas* consisting of some early free, quick-podding kind, followed towards the end of the month by a sowing of some early dwarf kind under a sunny south wall. These latter may afford a crop late, and should early frosts intervene, they may receive some slight protection in view of saving them therefrom. In cold situations preparation should be made towards the end of the month for a good sowing of *Cabbage* seeds, to stand the winter through for the early spring supply. It will be too soon to do this in early districts. No favourable opportunity of planting out all kinds of winter or early spring stuff must be lost, always taking advantage of a damp rainy period wherein to do so. Early *Celery* in trenches must be kept constantly root-watered if an early supply is to be anticipated. It is also an excellent practice to mulch the young plants immediately they are planted out therein, as it checks such excessive radiation, with its attendant evaporation, as is given off by crude soil directly exposed to the full rays of the sun. The last sowing of *Dwarf French Beans* should be made toward the end of the month; this, also, upon a sheltered aspect, as a protection against the early autumnal frosts. A good breadth of *Turnips, Onions,* and *Carrots*, with more *Lettuce*, *Endive,* and *Radishes* sown about the beginning and towards the end of the month, will come in useful, always endeavouring to sow during or immediately following a showery period, without which, owing to birds and an indifferent germinative capacity during dry weather, very little success can be anticipated. *Shallots* and *Garlic* should be taken up and dried preparatory to being stored, so soon as the surface growth dies away. *Herbs* of all kinds should be cut for drying just immediately before they expand their flowers, at which moderately-matured period in regard to growth, they possess a greater amount of their individual flavouring properties, than at any period before or after. Be particular in the process of drying not to expose them to the full sun's rays for a day or two, but rather let the process be carried on by slight gradations until the last few days, when full exposure to sun will be beneficial to them.—WILLIAM EARLEY, *Valentines.*

MASDEVALLIAS.

THE HIGH-COLOURED MASDEVALLIAS.

WITH AN ILLUSTRATION.

AMONGST what are now known and cultivated as "cool orchids," a very prominent place must be accorded to these *Masdevallias*, a genus which was lately but little known, but of which a group of several species has been very well represented in the accompanying plate. As to their treatment, these plants rank undoubtedly amongst the "coolest of the cool;" whilst as to the colouring of their flowers, they have a glowing, almost luminous richness of hue, which is perhaps not attained elsewhere. Add to this a peculiar neatness in their habit of growth, and it is no wonder that *Masdevallias* should be held in high favour both by cultivators and plant-lovers.

The species of *Masdevallia*, which inhabit the high, cool uplands of Peru and New Granada, are somewhat numerous, and several of them have now found their way into our gardens. For the present, however, we must confine ourselves to those represented in our plate, namely, *M. Veitchiana*, *M. ignea*, *M. Lindeni*, *M. Harryana*, and *M. tovarensis*.

The habit of all these species is very similar. From the root springs up a tuft of oblong spathulate leathery leaves, generally obtuse, and tapered into a stalk of moderate length. Among these rise up the taller scapes, each terminated by one or more of the remarkable flowers. In M. VEITCHIANA (fig. 1), the sepals, which form the conspicuous part of the flowers, are of a brilliant orange-scarlet, with a spot, or in some varieties a stripe, of rich crimson-purple, produced by the presence of multitudinous hairs, and yielding a most remarkable contrast; the upper sepal is erect and comparatively broad. In M. IGNEA (fig. 2), the sepals are of a fiery-orange, marked with lines of deeper red or crimson, while the upper sepal is projected forwards. In M. LINDENI (fig. 3), the sepals are of a lovely pucy-purple, with a whitish throat, the upper one being narrower and turned backward. In M. HARRYANA (fig. 4), the sepals are of a brilliant rosy-magenta, varying in hue, and sometimes, as in the form called *M. Denisoni*, passing into crimson of intense and glowing brilliancy. This species appears to be the most prolific of flowers, and the most charming in colour of any yet introduced. In M. TOVARENSIS (fig. 5), the flowers are white, the white being of very remarkable purity, and the flowers grow from three to five on a scape.

Masdevallias should be potted in shallow pots in a compost of fibrous peat, mixed with crocks, charcoal, and coarse sand. The drainage should be very perfect, as they require an abundance of water at the root, and also in the atmosphere. They should be kept near the glass, but out of the sun during summer, and should have as much sun as possible during the rest of the year. The winter temperature should not fall below 40°, nor exceed 60°; while during the summer months they must be kept as cool as possible, consistent with the other requisite conditions. The surface of the soil in which they are grown may with

advantage be covered with living sphagnum moss, which not only assists in keeping an equable degree of moisture about the roots, but is very effective as a set-off to the plants.—T. MOORE.

GLORIOSA SUPERBA.

THIS is one of those beautiful old plants now-a-days so seldom met with, but which is worthy of cultivation in every collection of stove plants. It requires no great management to grow it well and to flower it freely, where there is plenty of top and bottom heat. The tuberous roots should be potted early in March, in a compost of turfy loam, peat, and sand, and the pots should be plunged into the tan bed in the stove. When the shoots appear, they should be supported by being trained neatly to stakes or over a nice wire trellis, otherwise they will trail over the neighbouring plants. When the roots are first potted, and for some time after, very little water should be given, but during the summer months, when the plants are growing freely, they will require liberal supplies. They require a high temperature, with all the light possible during the whole period of their growth; bottom-heat is not absolutely necessary during the summer months, but they will do much better with it.

When the plants are well grown, they will produce a succession of their beautiful flowers for several weeks during the latter part of summer. When the stalks and foliage have decayed in the autumn the roots may be left in the pots during the winter months, but the pots should be removed from the hot-bed to a dry situation at some distance from the heating apparatus; all the heat at this time necessary being merely sufficient to keep the earth in the pots free from damp. They should be thus put aside until the beginning of March, when the roots should be fresh potted. They may be potted singly into pots of 6-in. or 8-in. diameter, according to the size of the roots; but when large specimens are required, five or six of the largest roots should be put into pots of 12-in. or 14-in. diameter. With proper management these will be objects of great beauty for many weeks towards the end of summer. Besides being very handsome and easy to grow, it has an additional recommendation for more extended culture, in its freedom from insect pests, to which so many other stove plants are subject.—M. SAUL, *Stourton, Yorkshire.*

PINUS INSIGNIS AS A SEA-COAST TREE.

THE *Pinus insignis*, with its lively, bright green foliage, is not only one of the most beautiful and ornamental of Conifers for adorning our landscapes yet introduced, but it is specially valuable as a quick-growing tree, being clothed to the surface. It is particularly well adapted for planting round our sea coasts, and within a few miles of the coast it seems to do well, as also on bleak, exposed high ground, where the soil is stony, sandy, brashy, and loose. Under all these conditions it thrives freely. According to my own observations, now continued during many years, there is no Conifer that will grow more freely or

maintain its beautiful colour better than will *Pinus insignis*, or that will form a quicker or better shelter or wind-breaker in exposed situations a distance from the sea. To be sure, after the scorching north-east frosty winds of March the leaves on the windward side will sometimes become scorched a little, but so would any other evergreen, even the furze-bush or the common native holly and ivy.

A row of *Pinus insignis*, alternating with *Cedrus Deodara*, was some years ago planted on the side of a very steep, high, brashy, dry hill; a cutting through the base of the hill had formerly been made for a road, and a heavy stone wall was built against the side of the hill some 16 ft. or 18 ft. high. A few feet from the top of this wall the trees in question were planted. Both the Pine and Cedar grew well for several years, but within the last few years the pine trees have completely met, overgrowing the cedars and killing nearly all of them, the tops only of some three or four being now to be seen; while the *Pinus* has made a thick and most formidable hedge—as thick as could possibly be seen or desired—from the earth's surface to a height of 30 ft. or more, and this within a few hundred yards of the open sea, and in a drafty wind-cutting vale. Here we have proof that this tree is most valuable as a quick-growing shelter-tree, in bleak, drafty situations round our coasts, from South-East to North-West.

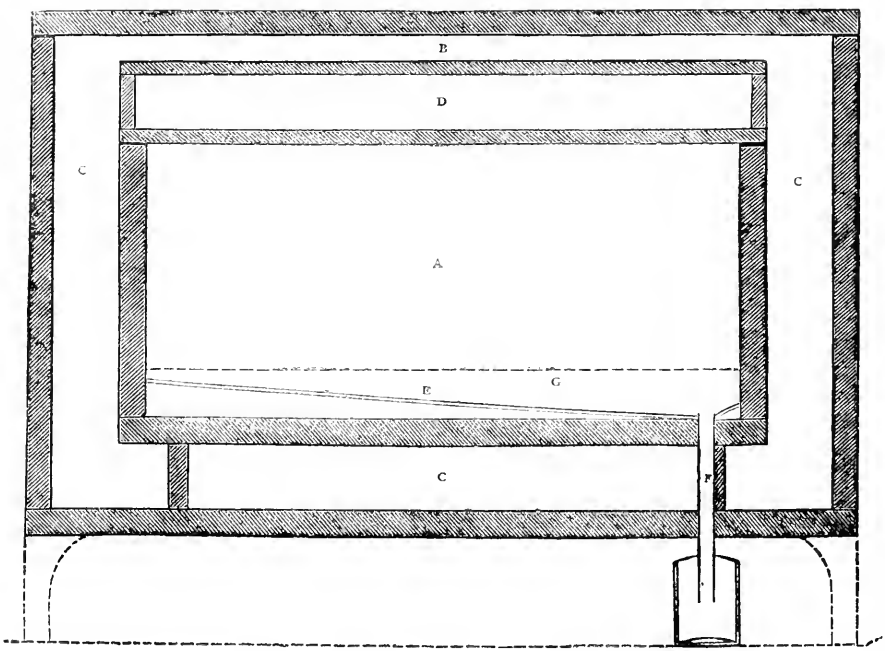
That the *Pinus insignis* does not do generally well on a chalky subsoil, or many miles inland, or will not, inland, stand such frosts as we had in 1837 and 1860-1, unless it is planted on the western aspect, sheltered by trees or woods, or planted in openings found or formed in plantations, is, moreover, pretty generally known; but for securing shelter in bleak, cutting situations near the coast, I have not seen any other tree so valuable and so noble, not only from its being a rapid grower, but also from its beautiful and distinct colour. The hedge above referred to I have watched for years. Of course, it was not planted for a hedge, but for a grand row of trees; nevertheless, a few years has made a thick, wide hedge of it, such as cannot be seen through, and that in a very bleak and exposed situation. —James Barnes, *Exmouth*.

MR. CHAPMAN'S ICE-BOX.

THE accompanying woodcuts (which we borrow from the *Gardeners Chronicle*) represent an article of domestic use which will be thoroughly appreciated at this season of the year. It is an economical and most thoroughly efficient ice-box, designed and constructed by our friend, W. Chapman, Esq., of Nottingham, and one which can readily be made by any ordinary workman who is at all handy at carpentry. It consists, as will be seen from the engravings, of two boxes, one set within the other, so that a thick layer of sawdust comes between them. The ice is, of course, kept in the inner box, and the two chief points which render the contrivance efficient, are that provision is made to keep the ice dry, and that it is secured against contact with the atmosphere. Of the efficiency of this utensil no better proof can be needed than

the fact (for which we can vouch from personal observation) that a lump of ice of, say, 18 lb. or 20 lb. weight, will give a liberal supply for daily use during ten or twelve days.

It is indeed a great luxury during the hot season to have so easily at command a supply of an article of use so refreshing as ice, the chief difficulty in ordinary cases being how to preserve it, even for a few hours. With this box there is no trouble whatever about it. The ice is simply wrapped in a thick layer of flannel—part of a blanket is the best material that can be employed—and placed on the wire bottom of the inner box, which secures perfect drainage, while, of course, the edges of both boxes, and the corresponding parts of



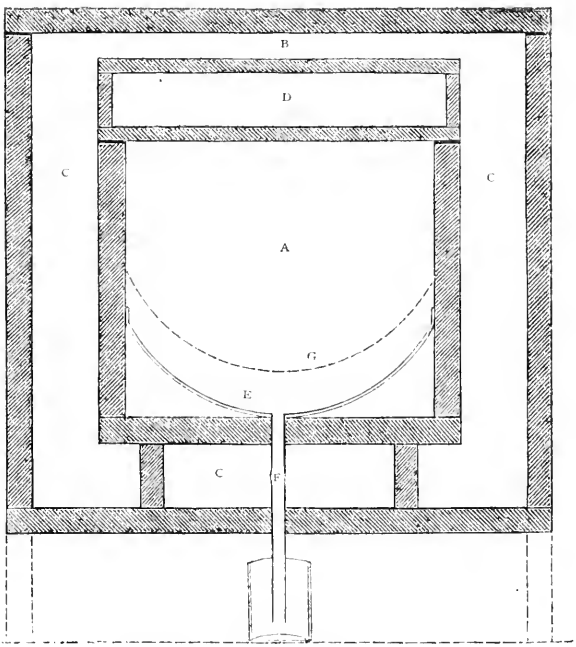
MR. CHAPMAN'S ICE-BOX—LONGITUDINAL SECTION.

the lids, should be padded, so as to ensure the perfect exclusion of the external atmosphere.

But little description is necessary, since the engravings, which are drawn to a scale of one-eighth to an inch, speak for themselves. We may, however, explain that A represents the inner box, or ice-chest; B, the space enclosed by the lid of the outer box, or protector; C, the space between the boxes, to be packed with sawdust; D, the lid of the inner box, which should itself be a box filled with sawdust; E, sloping bottom of zinc plate, with about 1½-inch fall to the drain-pipe; F, drain-pipe, the exterior end of which should dip into a jar of water, constantly full, so as to exclude the air; G, false bottom of stout galvanised wire netting, fixed about an inch above the zinc plate. This wire

netting, on which the ice rests, is to be covered with some woollen fabric, such as a piece of blanket or carpet. The sawdust should be equal in all directions.

The space enclosed by the lid of the outer box, or a portion of the inner box itself, may be utilised for keeping cool such viands as butter, cream, &c. In



Ice-Box—Transverse section near the end.

this case the sawdust should be of elm, ash, oak, or mahogany, since deal sawdust imparts a turpentine flavour to the viands; but if ice only is intended to be kept, deal sawdust will answer perfectly.—T. Moore.

THE KAISHA APRICOT.

SUCCESSFUL cultivation, in the case of our hardy fruits, depends much more on the kind of soil, and the amount of rain-fall, and exposure to cold, than on any system of pruning and training, although these are not without their value. Ever since the introduction of this Apricot, my experience, now extending over a good many years, differs in some respects from that of Mr. Tillery. I have invariably found that the branches die off as suddenly as those of the Moorpark, and are just as subject to canker, neither does it with me set its fruit with more freedom during adverse seasons. Like Mr. Tillery, I find the quality excellent, equal, or nearly so, to that of the Moorpark or Hemskirk, while the fruit ripens about two weeks earlier—a feature of considerable importance. The Royal comes into use much about the same time; it is a little larger, though

inferior in flavour, but being more hardy in every way, is still a very desirable kind for cold localities.

Apricot culture has ever been with us a teazing process, since we are never able to secure a crop, unless during exceptional seasons,—not from the want of flowers, but owing to the exposure to high wind and dashing rain from the Bristol Channel, which destroys the blossoms. To correct this all but periodical nuisance, we had a glass coping put up, 22 in. wide, and drooping at a slight angle, the rain being carried away by a metallic gutter. This proved quite useless; and last winter we covered 100 ft. of wall with a glass case, which has every appearance of answering the purpose fully.

I have long observed that in calcareous districts, Apricot trees growing against farm-houses and labourers' cottages were in perfect health, bearing annually full crops of fruit, though the ground was as hard as a turnpike road. Taking a lesson from this fact, I have introduced into our borders a large quantity of lime soil and lias brash, allowing the whole mass to remain undisturbed. I feel satisfied that all drupaceous fruit trees require calcareous feeding to assist the formation of the stone, as well as to strengthen the vascular bundles that unite the fruit to the tree. The absence of this material may be one of the principal causes why Peaches, Plums, and Cherries occasionally shed their fruit during what is called the "stoning period." Objections may be urged against this fact, but still they range among the very few exceptions.—ALEXANDER CRAMB, *Tortworth.*

HARDY HEATHS.

IN going over Milburn Down, in Devonshire, when, as the Scottish songs have it, the "heather was blooming," my little girl, who had all her life lived in gardens, asked me, with that arch simplicity which characterises the infant mind, "Whose garden is this?" And well she might put the question, for there was considerable variety of colour, and several square miles of plants densely crowded together, and in full bloom; and the beaten path over a peat moor is such an improvement over any other pathway known, that I wonder luxury has not laid peat pathways in pleasure-grounds for aristocratic feet. This was indeed a garden, and one which had never been touched by man for a hundred years or more, since we could see the circular trenches of the warrior grown over with *Calluna*, and more than one species of *Erica;* while besides the Heather-bell there were plants belonging to allied genera of the same family, the yellow blossom of the Petty Whin aiding the rosy hues of the heather, by its violent contrast of deep yellow and deep green.

Now if any gardener hard pressed for bedding plants for autumn could have got this Milburn furniture moved into the garden, it would have done him good service. Some may perhaps jeer at this idea, as if the plants in question were untameable, and say, "Shall the rhinoceros be willing to serve thee?" or "Will he break the clods after thee?" (Job xxxix. 9.) Now this is just what I wanted to come at, for I once found myself sadly short of flowering shrubs or plants to

make a new place look clothed; and as there happened to be some hundreds of acres of common close by, I had recourse to the Wilderness to improve the Garden, and got splendid specimens of dwarf shrubs, and by carrying a body of soil along with each plant the sods contained all the elements needed, and the plants flowered as well in the garden as if they had remained on the moor.

When I was at Alton Towers, I made a collection of all the hardy heaths that were in the trade at the time, and grew them together in one place. The edgings to the beds were made of heath, and the specimens were made of hillocks of one kind, with stones so that the centre should be raised, to take off the flat and tame character that plants all of one height would have. The effect in the season of flowering was excellent, but judge of my surprise when I got an order to have the whole of them removed, for it must be confessed that they were not handsome when not in flower, as Sir Walter Scott has borne witness, when he writes, "land of *brown* heath," and alas! it was when my heather was brown that her ladyship slighted it, and got it ordered for removal, very much against her loving lord's wishes. He bade her wait till it was in bloom, and assured her that she would then be delighted with it, as he himself had been. Now although that argument was lost, and could not save the removal of the hardy heaths, it is valuable now, to show that a nobleman who knew the plants well by that excellent test, "*having paid for them*," admired a collection of hardy heaths, and regretted that they should be sacrificed because they were not always in bloom. Collections of Cape Heaths in-doors were at one time common enough, and the late Mr. McNab, of Edinburgh, got great credit for cultivating them in a natural way with lumps of sandstone among the soil, just as he saw heaths grow on his native hills. All the fine hair-rooted plants require this style of growing them, and as hillocks of stones and sandy peat may be made of various shapes and sizes, much may be accomplished at comparatively little cost in this way, if there be a heather hill near, or a thorny brake, or a "Weary-foot" common within reach. Then a goodly part of the materials will be got for little more than the fetching. In the West of England the *Erica australis* stood the winter well, and yielded cut flowers in spring. I have written this in order that parties may judge for themselves of the beauties of heather, and should any one attempt a heath parterre, as I did, I would take the precaution, were I in his shoes, to consult both heads of the family before going to any expense or trouble in the matter. *Verbum sap.*—ALEX. FORSYTH, *Salford.*

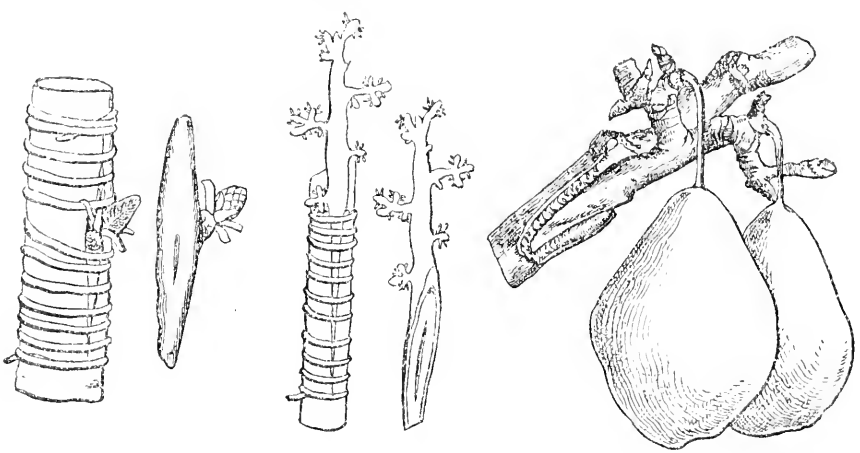
POPULUS SIMONI.

THIS fine species of Poplar, which belongs to the balsamiferous group, was introduced from China to the garden of the Paris Museum, by M. Simon, some ten or twelve years ago. It is described as being a vigorous hardy tree, with a thin straight stem, and long spreading branches, clothed with red-brown bark, which is marked here and there with small white linear lenticels.

The twigs are angular, of a reddish tint, with thin deep-red viscous shining buds. The leaves are thick and somewhat leathery, sub-erect, shortly petiolate, from 5 in. to 7 in. long, and about 3½ in. wide, of an oval elliptic form, narrowed to both ends, slightly toothed, of a deep-green colour on the upper surface, whitish beneath. The petioles are nearly an inch long, stoutish and channeled. It appears to be an ornamental tree, well worth planting, being highly spoken of by our French *confrères*, who have had an opportunity of seeing it in a growing state.—T. M.

GRAFTING WITH FRUIT-BUDS.

WE cannot better show the utility of Mr. C. Baltet's *L'Art de Greffer*, an English translation of which has recently been published,* than by quoting what he has to say on the subject referred to in the heading to this article. The art of grafting has been for many years practised in a variety of forms and with remarkable success by our French and Belgian neighbours, and in the treatise above referred to, M. Baltet has embodied all that



GRAFTING WITH FRUIT BUDS, AND ITS RESULTS.

is known on the subject. Hence the translation from which we quote, and from which we copy one or two illustrative figures, will be extremely useful to the gardeners of this country, both amateur and practical. On the subject of Grafting with Fruit-buds, we read as follows :—

"This interesting operation, which is more especially applied to the Pear-tree, has a double object. 1. The utilising of superfluous fruit-buds. 2. To render fruitful a vigorous subject which does not possess fruit-bearing qualities. About the month of August, the fruit-buds of one subject which has too many, are grafted on another which is deficient in them; and in the following year, the buds which have been thus grafted flower and bear fruit much better than if they had remained on the parent tree. The operation should take place when the sap begins to decline; yet, as we have to do with trees of a certain age, we should take care not to graft too late. A very vigorous tree or a gourmand branch is best of all for this kind of grafting. Fructification thus forced upon them will subdue them and

* *The Art of Grafting and Budding.* By Charles Baltet. Illustrated. London W. Robinson, Southampton Street.

bring them to bear fruit of themselves. We may thus also have several varieties of fruit on the same tree, which, however, is perhaps neither an advantage nor the reverse. The scions are taken by preference from those trees which are usually too heavily laden with fruit, and the fruit-buds which are destined to fall at the next pruning will answer exactly for grafting purposes. The scions are cut from the parent-tree just before using them; their leaves must be removed at once, and the scions themselves kept in a cool place in a vessel of water or in damp moss. The scions are generally prepared in the manner already described under the heads of side-grafting with a simple branch, or one with a heel, and veneer-grafting with straps. A skilful operator will know how to use them in different processes. The figure shows a scion prepared. The sloping cuts are made on the back and at the base. The stock has been prepared with a T incision, and the scion inserted under the raised bark. Sometimes the bark at the head of the T is pared away to facilitate the insertion of the scion. A scion which appears rather long should not be thrown away; all that is necessary is to make the sloping cut longer, even to the extent of half the length of the scion; in this way some fruit-buds on the back of the scion may be inlaid in the incision made in the stock. Frequently the scion is an exceedingly short branch, or even a simple fruit-bud. It should be cut off with a strip of bark and alburnum an inch or two in length attached. Care should be taken not to remove the woody part at the base; it should be merely smoothed down so as to ensure its cohesion; it is then inserted into the T incision in the stock. It should be bandaged rather lightly throughout, and the points of junction covered with clay, mastic, or the leaf of a tree, should any part of the tissues remain exposed. The bandage should not be removed before the fruit has set in the beginning of the following summer. Should there be any fruiting-spurs ready for grafting when the sap is not very abundant, it will be best to employ cleft-grafting, inlaying, or crown-grafting. On shoots and simple but vigorous branches success is more certain in autumn than in spring, but the best time is from July to September with side-grafting under the bark. The process of veneering with strips might also be advantageously used. The Pear-tree is best adapted for this operation. Very fertile and large-fruited varieties, such as Beurré Clairgeau, Williams', Colmar, D'Aremberg, &c., yield splendid crops by this method. The fruit-buds preserve their fruit-bearing properties. The figure shows the result in 1867 of a graft made in 1860, and for seven years it has constantly borne fruit. We have proved the advantage of this process during twenty years' experience of fruit-bud grafting in our schools of fruit-culture. We are indebted for it to M. Gabriel Luizet, of Ecully, to whom belongs the credit of having first made it commonly known, although it had been invented for some time before he brought it into practice."

The accompanying figures, copied, with slight variations, from the illustrations to the chapter above quoted, show the different modes of fruit-bud grafting and its results.—T. Moore.

HARDY CLIMBERS.

NOW is the time for observing the value and adaptability of hardy climbing and trailing plants as decorative objects in our gardens, or around our dwellings. A few notes made at this season will be of great service when the planting time comes on.

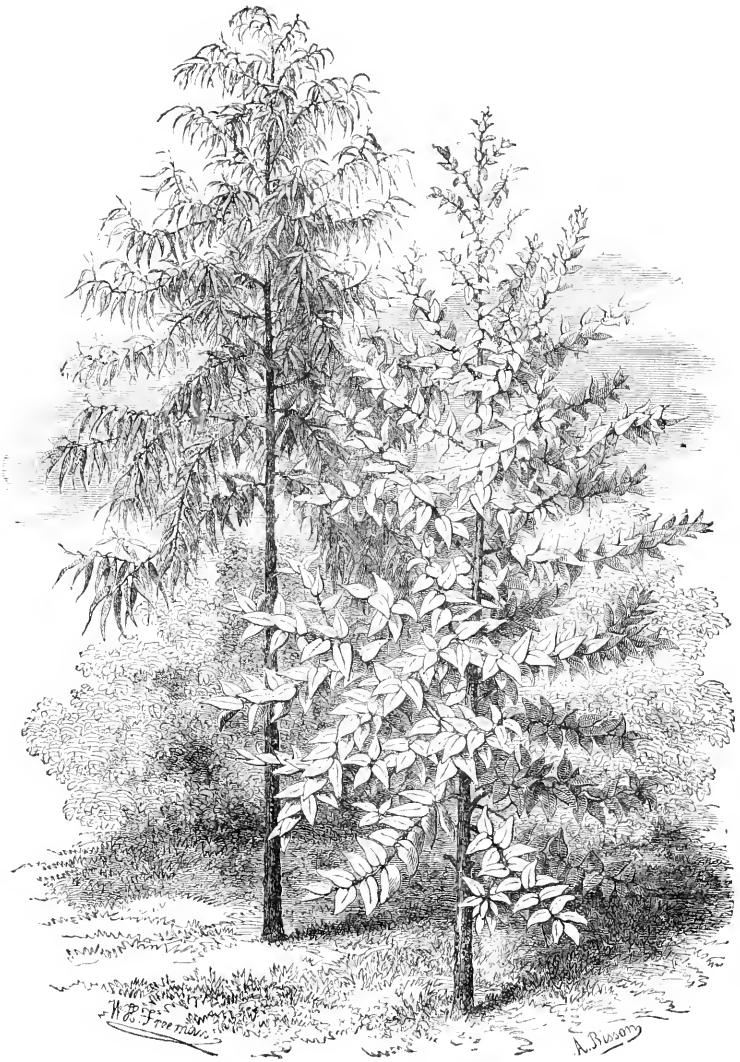
The foremost position may be awarded to the *Virginian Creeper (Ampelopsis)*, so largely used for draping walls, balconies, or verandahs in the neighbourhood of London. For hiding any unsightly feature in the garden, or for draping a blank wall with freshness and beauty during the summer, this plant has few equals, while in the autumn its foliage assumes all the rich and varying tints of the waning year. Some of the strong-growing *Ivies* may be used for blank walls or screens, and though much slower in growth than the *Ampelopsis*, they have the additional advantage of being evergreen. Ivy should, however, always be closely clipped in about the middle of April, or just before its young foliage expands; then you get rid of all the rubbish and litter of falling leaves during

the summer, and the wall becomes one dense mass of fresh green leaves. In order to give variety to the monotonous dark green of the Ivy, it is as well to plant a few climbing roses at intervals, the flowers of which stand out pure and bright on the deep verdant ground. A plant of *Aristolochia Sipho* trained in along an old ivy wall or screen, forms an agreeable contrast, and its large, bright green heart-shaped leaves break the monotonous flatness; or some of the profuse-flowering varieties of *Clematis* may be trained up pillars at a little distance from the wall. We have scarcely begun to appreciate the Clematis, or accord it the position it most assuredly deserves among our hardy climbers.

Many of the common varieties of the *Grape Vine* (*Vitis*) form fine climbers for a wall or trellis, while for pillars, chains, or festoons of bright foliage commend us to the varieties of *Vitis vulpina* or American Fox Grape, which are fresh and green all the summer, and in the autumn are heavily laden with rich purple clusters of fruit among the varying red, brown, or crimson foliage. The common *Hop Plant* (*Humulus*) is one of the finest and most tractable of our British climbers, and few plants will cover a screen or verandah quicker than this, if liberally treated, while its clusters of pale yellow bracts in the autumn are nearly as effective as the fruit of the Vine itself.

Among flowering climbers, the common *Woodbine* or *Honeysuckle* (*Lonicera*) occupies a prominent position, and is admirably adapted for training up the trunks of large trees, or for clambering over rustic walls and trellises. The White *Jasmine* (*Jasminum*) does well in similar positions, and the bright yellow *J. nudiflorum* is valuable for lighting up the sombre ivy during the early spring months with its golden star-like flowers. One or two hardy *Bignonias* do very well in sheltered sunny positions in the south, and we must not forget their ally *Eccremocarpus scabra*, with its dark green pinnate foliage and clusters of orange or coral-like flowers; this plant is perfectly hardy in sheltered southern counties, and generally flowers profusely. In 1872 I saw a cottage near Killerton, in Devon, one end of which was entirely covered with the foliage and bright berry-like blossoms of this plant. The common blue *Passionflower (Passiflora cærulea)* is perfectly hardy on a sunny wall, even in the Midland counties, and produces numerous radiate flowers among its elegantly-cut palmate leaves. The rare *Mutisias* may be cultivated in a warm border, and succeed tolerably well if their roots are protected during the winter months with a mulching of stable-dung or litter. *M. decurrens* used to grow and bear its bright, orange, gazania-like flowers freely in Glendinning's Nursery, at Turnham Green.

Some of the more robust climbers, as the *Vine* or *Virginian Creeper*, may be made to contribute largely to garden scenery by training them up large tree trunks and along the horizontal branches, from which they may be allowed to fall in negligent profusion, not unlike the gigantic lianas of tropical forests. *Wistaria sinensis* makes a fine object treated in this manner, far more picturesque and effective than when nailed formally to a wall. It is also very effective when allowed to run up a Laburnum tree, as at Mr. Waterer's.—F. W. BURBIDGE.



THE BLUE GUM, EUCALYPTUS GLOBULUS.

THE Blue Gum of Tasmania, *Eucalyptus globulus* of botanists, has latterly attracted some attention, not only as a rapid-growing tree, in climates at all favourable to its development, but also for the antiseptic and febrifugal properties it possesses. Intermittent fever is said to vanish before it, this salubrious influence being attributed to its absorbing the moisture of marshy districts, and to its aromatic emanations.

It has been observed that wherever this tree grows largely, as in Australia,

the climate is healthy; and the improvement effected by introducing it has, it is said, made itself distinctly felt in Algeria, while, from its efficacy in marsh and other fevers, it has already gained the name of Fever-tree in Spain. Planted on the banks of rivers, canals, or lakes, it gives solidity to earthworks, and also presents an obstacle to inundations. After extensive trials, Dr. Carlotti reports that the whole of this giant tree—leaves, bark, and wood, are impregnated with febrifugal properties. Professor Vauquelin obtained from it an essential oil, containing eucalyptol or eucalypt-camphor, an extract resembling resin of cinchona. The leaves have, moreover, been most successfully used as plasters for wounds, having from their balsamic nature the property of absorbing all unpleasant odour.

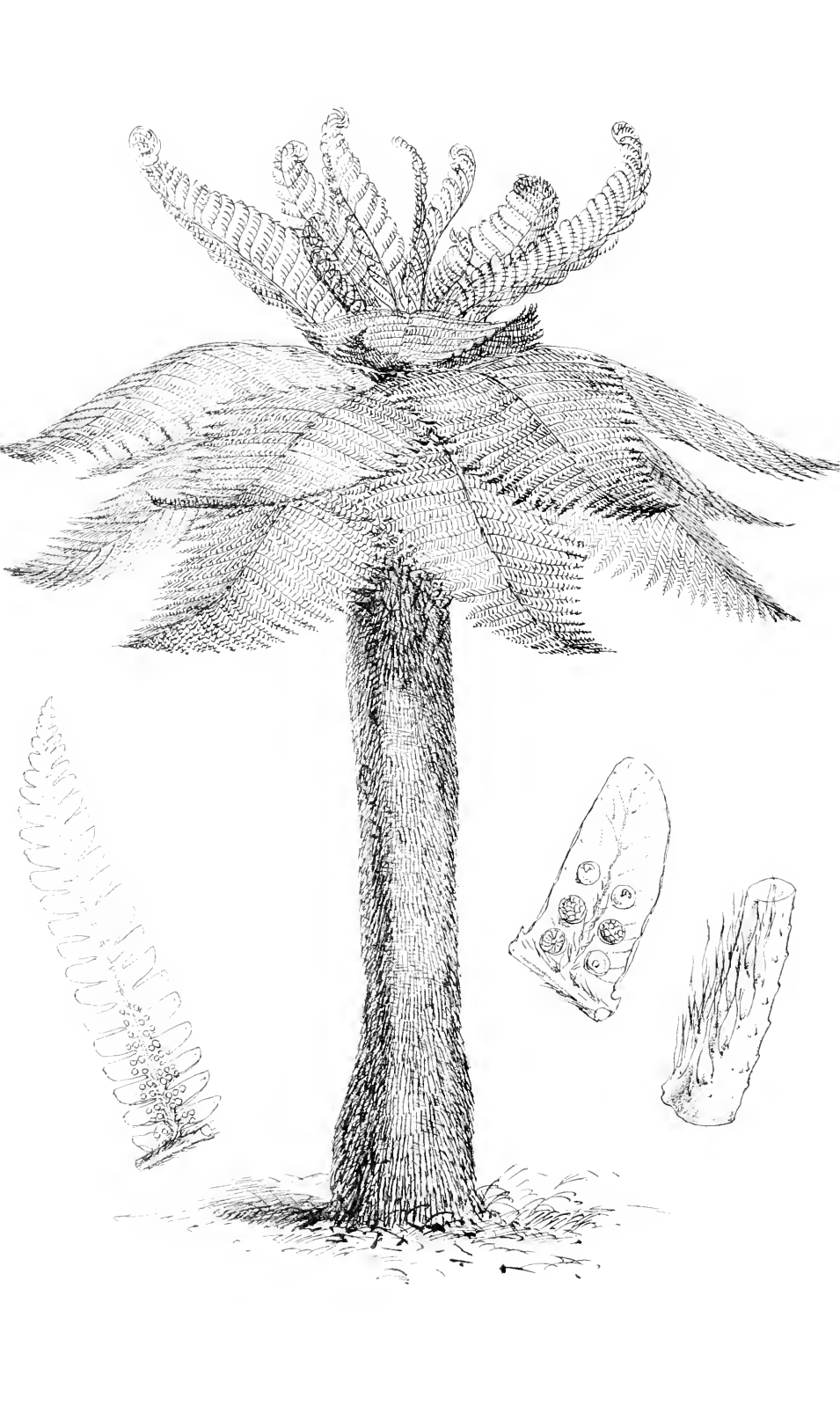
In the South of France, Corsica, Algeria, Spain, and Italy, and in fact in all the warmer temperate climates, the Blue Gum, which is evergreen, may be cultivated with complete success, its growth being most rapid. The leaves and roots have a wonderful absorptive power for moisture, which accounts for this extremely rapid growth. If sown in spring, the plants send up shoots several yards in length during the summer, and the growth of the second and third years is also very rapid, after which the trunk thickens. Plants of eight or ten years' growth acquire a mean height of 60 ft. to 70 ft., and a circumference of about 4 ft. near the ground. It has been computed that in suitable climates forests of *Eucalyptus* would yield in 15 to 20 years, what it would take 100 to 150 years to obtain from ordinary forests, and thus the products of the land might be quintupled.

The *Eucalyptus globulus* is a lofty tree in its native countries, Tasmania and Victoria, sometimes exceeding 200 ft. in height. The bark is somewhat fibrous, but deciduous, and the young shoots and foliage are often glaucous. On young trees the leaves are opposite, sessile, and cordate (see the figure), but on those of full growth they are lanceolate or ovate-lanceolate, acuminate, sickle-shaped, often 6 in. to 1 ft. long. In favourable localities in Devon and Cornwall, as well as in the Isle of Man and in Ireland, the Blue Gum ought to succeed, and perhaps also along our southern coast it might be planted experimentally with a fair prospect of success. The accompanying figure of this most valuable tree is from M. Alphand's *Les Promenades de Paris*.—T. MOORE.

NEW DWARF ALMONDS.

THE Dwarf Almond, *Amygdalus nana*, is a deciduous shrub of low growth, which should oftener find its way into ornamental shrubberies. It is, however, one of the old-fashioned things that seem to be overlooked now-a-days. M. Carrière has recently described (*Rev. Hort.*, 1872, 340) two new varieties, which he calls *A. n. microflora* and *A. n. campanuloides*.

Amygdalus nana microflora is a branched bush with sub-erect ramifications, having the leaves like those of the type, oblong-lanceolate, and the flowers small,



spreading, with narrow petals, often more numerous than usual, thus showing a tendency to duplicature, of a lively rose, each marked at the tip exteriorly with a deeper spot.

Amygdalus nana campanuloides, so named from its numerous flowers being much more expanded than those of the type, so as to acquire a kind of bell-shaped form, presents little difference of habit, but it forms nevertheless one of the prettiest of shrubs at the time of flowering, since it seems to disappear under the quantity of its pale fleshy-rose-coloured flowers. In this case, the leaves are long, narrowly lanceolate, with rather fine toothing. The multiplication of these two plants is effected by means of suckers, which are produced abundantly; these should be separated and planted in the autumn, for if this work is deferred till spring, the plants scarcely push forth at all the first year.—T. M.

CYATHEA BURKEI.

WITH AN ILLUSTRATION.

TREE Ferns are amongst the most effective of ornamental plants, so that any addition to the hardier set of them, requiring only the temperature of a greenhouse, is specially welcome. From this point of view, *Cyathea Burkei*—of which we now give an illustration, from a fine specimen imported by Mr. Bull, of Chelsea, from Natal—may be regarded as a most important acquisition, for independently of the natural gracefulness of form manifested in its ample fronds, they have naturally a drooping habit, which adds very greatly to the elegance and beauty of the tree. This seems to be a characteristic peculiarity of *C. Burkei*, for it is not confined to a single specimen; and in this respect the plant is far more desirable than the allied *C. Dregei*, imported at the same time, the fronds of which are more rigid.

As will be seen from our figure, the plant has a stoutish trunk, which in the imported specimens varies from about 7 ft. to 10 ft. in height. The fronds are bipinnate, with a dark-coloured tubercled stipe, bearing at the base lance-shaped chaffy scales; they are membranaceous in texture, drooping, with lanceolate, bluntly acuminate, bipinnatifid pinnules, the segments of which are oblong-ovate, obtuse, and entire. The sori are few.

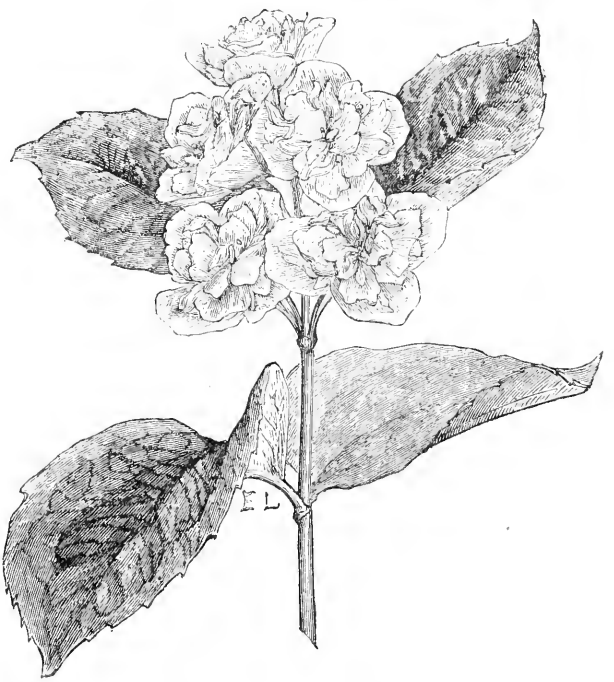
Both this and *Cyathea Dregei* (which latter, according to Drège, its discoverer, forms a trunk of only 3 ft. to 4 ft. high) are fine additions to the group to which they belong, since, being natives of South Africa, they will only require the temperature of a greenhouse. The pendent fronds of *C. Burkei* give it a particularly pleasing appearance.—T. Moore.

PHILADELPHUS PRIMULÆFLORUS.

WE are enabled to publish the accompanying figure of a pretty hardy shrub through the courtesy of the publishers of the *Revue Horticole*, whence also the following particulars are gleaned:—*Philadelphus primulæflorus* is the issue of the common Syringa, *P. coronarius*. The name given to it

recalls exactly the form of its flowers, which, in their aspect, are analogous to those of the double-flowered varieties of Primrose, with which, in the spring, one makes such pretty edgings. The characters of *P. primuleflorus* may be thus summed up :—It is a bushy, branched shrub, with short ramifications; its leaves are glabrous, regularly oval-cordiform, of a deep green, dentate, with sharp spinescent teeth, having a bullate surface, and reticulate prominent veins; its flowers are odoriferous, semi-double, of a fine white, with regularly-rounded petals.

This is a very pretty plant, especially remarkable for the regularity of it



PHILADELPHUS CORONARIUS PRIMULÆFLORUS.

flowers, which, never thoroughly opening, rather recall those of certain species of *Ranunculus* when they begin to expand. It is unnecessary to add that it is hardy, and that its culture and multiplication are identical with those of the common *Philadelphus coronarius*.—T. M.

GARDEN LILIES.—CHAPTER III.

WE now come to the group *Eulirion* or the Funnel-flowered Lilies, consisting of species in which the perianth is distinctly funnel-shaped, the segments broadest above the middle and spreading only towards the points, while the filaments and style lie parallel or sub-parallel with

each other. To this group belong the following species, namely, *Lilium candidum*, *L. japonicum*, *L. nepalense*, *L. Krameri*, *L. longiflorum*, *L. Washingtonianum*, *L. cordifolium*, *and L. giganteum*, and perhaps others also.

4. Lilium candidum (*Bot. Mag.*, t. 278).—This is the well-known White Lily of the gardens, a species distinguished in the *Eulirion* group by its numerous narrowish scattered leaves, and its funnel-shaped flowers, two to three inches long. It grows 3 ft. to 4 ft. in height, and is erect in habit, and perfectly glabrous. In autumn, long before the flowering-stems are developed, a tuft of oblong bluntish shining green leaves is developed from the bulb; and from amongst these in spring the flowering-stems grow up. The stem-leaves are from sixty to a hundred in number, much crowded and conspicuously longer in the lower part of the stem, being there erecto-patent, linear, and 6 in. to 8 in. long, diminishing

Lilium candidum—flower one-half natural size

upwards, so that the upper ones are about an inch long, and acquire a lanceolate form. The flowers grow in a thyrsoid raceme, and are from five to ten, or sometimes more, in number; pure white, 2 in. to 3 in. long, the upper ones more or less ascending, the lower drooping; the flower-stalks rigid and erecto-patent, the lower 2 in. to 3 in. long, with lanceolate or ovate-lanceolate bracts; the perianth divisions are oblanceolate, the outer ones six to nine lines, the inner eight to ten lines broad, all narrowed gradually to a cuneate base. The anthers have pure white filaments, and bright yellow pollen; and the style is from $1\frac{1}{2}$ in. to 2 in. long, slightly ascending towards the point.

The White Lily is a native of the South of Europe, extending from Corsica on the western to Greece and Turkey on the eastern side; and according to books, is found also in Palestine, Syria, and Persia. It was one of the earliest species introduced to cultivation, and is yet a favourite in every garden. Indeed, it has

been observed of it that it is so much admired for its beauty and stateliness, for the snowy whiteness of its flowers, and for their fragrance, as to be quite without a rival.

L. (c) PEREGRINUM (*Sweet, Brit. Fl. Gard.*, ser. ii., t. 367).—This plant has been known in English gardens since the time of Miller, but does not appear to have been met with, at least at any recent date, in an indigenous condition. The plant is more slender than in typical *L. candidum*, the leaves narrower and fewer, the flowers smaller, with narrower, twisted, more distinctly clawed perianth segments, which are, however, white, as in the type, to which it is much inferior in beauty. Miller states that it came originally from Constantinople; and Professor Don suggests that it was thence introduced to the Dutch gardens, whence it found its way to this country.

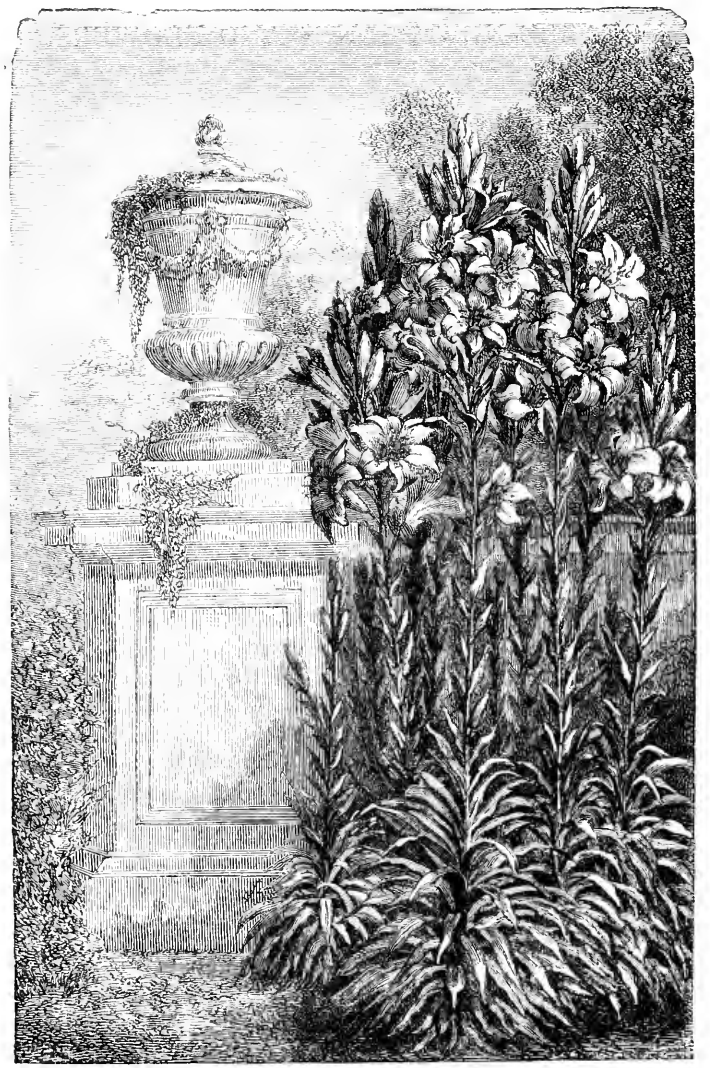
L. CANDIDUM STRIATUM.—This variety has been known since the days of Miller, who remarks concerning it:—"The variety with variegated flowers has been in England more than 40 years, but is now very common in most of the gardens, and is by some persons esteemed for the variety of its purple stripes; but as the pure white of the flower is stained by the purple so as to appear of a dull colour, many prefer the common White Lily to this." The flowers are marked externally with reddish-brown or purple lines and spots.

L. CANDIDUM FLORE-PLENO.—This variety, which has double flowers, is rather to be prized as a curiosity than for its beauty. Miller says of it, that it is less valuable than the others, because the flowers rarely open well unless they are covered with glass to shelter them from rain and dew; and when they are developed, they want the agreeable odour of the single ones, "even when they open the fairest; for as by the multiplication of petals in the flowers the parts of generation are destroyed, so there is a want of the fecundating powder from which the odour is sent out." It is said to be of garden origin. This double-flowered variety is said to have its peduncles elongated, and bearing on a length of 4 in. to 6 in. a large number of imbricated petaloid bodies disposed in a spike, and most frequently of a greenish-white colour. Closely analogous to it, if indeed not confounded with it, must be the *L. c. spicatum*, the *Lis à fleurs en épi* of the French, which, instead of bearing distinct perfect flowers, is said to have the stem terminated by a long spike of white imbricated inodorous petals.

L. CANDIDUM VARIEGATUM.—The peculiarity of this variety is its golden-edged leaves. The leaves come up early in the autumn, and being of spreading habit, and finely edged with broad yellow stripes, they make a pretty appearance during the winter and spring months. The flowers are white, like those of the type, but appear earlier in summer. Another variegated variety has the leaves blotched with golden-yellow, but the marking is not constant.

Notwithstanding the sweet and delicious odour of the Lily in the garden, it becomes deleterious when too freely inhaled in an apartment. Grave accidents, and even death itself is reported to have resulted from individuals having remained

exposed to the emanations of Lily-flowers during the night. The Lily, observes M. Richard, in the *Dictionnaire Classique d'Histoire Naturelle*, has been sung by the poets of all ages as the emblem of virginal purity. They have represented



LILIUM CANDIDUM.

it to us as owing its origin to the falling to the earth of some drops of milk from Juno's breast, at the moment when the goddess repelled Hercules, still a child, who had profited from the sleep of the wife of Jupiter to nourish himself with her milk. The scales of the bulb of the White Lily, boiled or roasted, have

been used as a poultice to hasten the suppuration of sluggish abscesses; and a very odoriferous distilled water obtained from the flowers was formerly employed as an antispasmodic, but is now seldom made use of.—T. MOORE.*

NOTABLE NEW PLANTS AND FLOWERS.

[F.C.C. = First-class Certificate; S.C.C. = Second-class Certificate; B.C. = Botanical Certificate; F.C. = Floricultural Certificate.]

ANTHURIUM CRYSTALLINUM [F.C.C.].—The large shield-shaped leaves are of a bronzy-olive hue, veined with white, and are very handsome.—*Mr. B. S. Williams: R.H.S., June* 4.

ARALIA ELEGANTISSIMA [F.C.C.].—In the way of *A. Veitchii*, but with larger and broader leaflets.—*Messrs. Veitch & Sons: R.H.S., June* 4.

AZALEA (INDICA) MADAME PAUL DE SCHRYVER [F.C.C.].—A double-flowered sort of a clear bright rose-colour; the flowers large and full.—*Messrs. Veitch & Sons: R.H.S., May* 21.

BEGONIA VIVICANS [F.C.C.].—A brilliant orange-carmine form of the *B. Sedeni* type.—*Messrs. E. G. Henderson & Son: R.H.S., July* 4.

CALCEOLARIA (SHRUBBY) AURORA [F.C.C.].—Orange ground, heavily shaded with crimson; a very showy free-blooming variety.—*Mr. R. Dean: R.H.S., June* 4.

CAMPSIDIUM FILICIFOLIUM [F.C.C.].—A slender climbing plant, with pinnate foliage, the leaflets small and elegantly cut.—*Mr. W. Bull: R.H.S., June* 4.

CATTLEYA MENDELII [F.C.C.].—A summer-flowering *C. labiata*, with delicately tinted flowers of great beauty.—*Mr. W. Bull: R.H.S., June* 4.

CHAMÆROPS HUMILIS VARIEGATA [F.C.C.].—The leaves, which are normal in form, are variegated with pale yellow.—*Mr. W. Bull: R.H.S., June* 4.

CLEMATIS CHARLES NOBLE [F.C.C.].—A fine hybrid variety, having deeply shaded violet flowers, somewhat tinted with red, the segments large and broad; the colour of this variety deepens with age.—*Mr. C. Noble: R.H.S., May* 21.

CLEMATIS ELAINE [F.C.C.].—A charming double-flowered variety; colour, pale mauve, with a slight tinge of magenta.—*Mr. C. Noble: R.H.S., May* 21.

CLEMATIS MAY QUEEN [F.C.C.].—A beautiful spring-blooming variety; flowers of fine form, creamy-white, edged and feathered with lavender-pink, the segments broad and flat.—*Mr. C. Noble: R.H.S., May* 21.

CLEMATIS MRS. CHOLMONDELEY [F.C.C.].—Delicate mauve; flowers large and fine, in the way of *Duke of Richmond.*—*Mr. C. Noble: R.H.S., May* 21.

CLEMATIS UNDINE [F.C.C.].—A double-flowered variety, having pale-mauve flowers, tinted with magenta; flowers fully double.—*Mr. C. Noble: R.H.S., May* 21.

COLEUS VERSCHAFFELTI SPLENDIDA [F.C.C.].—A very showy orange-red tinted sport; an attractive bedding plant.—*Messrs. Henderson & Son: R.H.S., June* 4.

CROTON CORNIGERUM [F.C.C.].—A stove shrub, with fine broad recurved leaves, banded with orange-yellow.—*Mr. W. Bull: R.H.S., June* 4.

* Apropos of this subject, we may take the opportunity to welcome the publication of a pamphlet entitled *Notes on Lilies and their Culture; with Extracts from M. Duchartre's Observations on Lilies, also Mr. Baker's Synopsis, M. Max Leichtlin's Catalogue, &c.* By Messrs. Teutschel and Co. Colchester: Benham and Harrison. It forms a handy book of reference, embracing most of the information published respecting Garden Lilies during the last year or two, and is a really valuable and convenient hand-book for those who take interest in Lily-culture.

Croton grande [F.C.C.].—The shining bright olive-green leaves have quite a metallic lustre, and are veined with bright pink; a distinct and handsome form.—*Mr. W. Bull: R.H.S., June* 4.

Cyathea Burkei [F.C.C.].—A distinct and handsome greenhouse Tree Fern from Natal, with bold pendent fronds.—*Mr. W. Bull: R.H.S., June* 4.

Cyathea Dregei [F.C.C.].—A fine greenhouse Tree Fern from Natal, distinct in character.—*Mr. W. Bull: R.H.S., June* 4.

Cycas imperialis [F.C.C.].—A bold-looking and handsome cycad, distinct and fine.—*Mr. W. Bull: R.H.S., June* 4.

Dieffenbachia brasiliensis [F.C.C.].—A bold-leaved species, the pale-green leaves handsomely blotched and spotted with white and olive.—*Messrs. Veitch & Sons: R.H.S., June* 4.

Dracæna Baptistei [F.C.C.].—A bold-growing type, with bronzy leaves, veined and edged with red.—*Messrs. Veitch & Sons: R.H.S., June* 4.

Dracæna Goldieana [F.C.C.].—A remarkably fine species from Tropical West Africa, with short broad-spreading leaves of a deep green, marked with transverse bars of silvery-grey.—*Mr. W. Bull: R.H.S., June* 4.

Dracæna rosea [F.C.C.].—This has the young leaves of a rosy-red tint, changing to a metallic hue with age.—*Mr. W. Bull: R.H.S., June* 4.

Gloxinia Brilliant [F.C.C.].—Rich carmine-purple, dashed with crimson; extra fine; an erect-flowered variety.—*Messrs. Rollisson & Sons: R.H.S., June* 18.

Gloxinia Fanny Wilder [F.C.C.].—Erect-flowered, purplish-rose, edged with white, and a rich spotted throat; large and very fine.—*Messrs. Rollisson & Sons: R.H.S., June* 18.

Gloxinia Mr. Haines [F.C.C.].—An erect-flowered variety, pale rosy-pink lobes, stained with bronze at the base, and purple throat.—*Messrs. Veitch & Sons: R.H.S., May* 21.

Gloxinia Prince Leopold [F.C.C.].—The flowers drooping, very similar in colour to the foregoing, but not so deeply coloured in the throat.—*Messrs. Veitch & Sons: R.H.S., May* 21.

Gloxinia Rev. H. A. Bridges [F.C.C.].—A drooping-flowered variety, bright rose, the throat being handsomely marbled with purplish-rose.—*Messrs. Rollisson & Sons: R.H.S., June* 18.

Lælia Wolstenholmiæ [F.C.C.].—Pale-lilac ground, the sepals and labellum edged with crimson.—*Messrs. Veitch & Sons: R.H.S., June* 4.

Lewisia rediviva [F.C.C.].—An ally of the Portulacas, having charming pale-pink flowers.—*Messrs. Backhouse & Son: R.H.S., June* 24.

Lobelia pumila grandiflora fl.-pl. [F.C.C.].—A full double-flowered variety of *L. pumila;* a very interesting novelty.—*Messrs. Dixon & Co.: R.H.S., June* 4.

Odontoglossum Insleayi leopardinum [F.C.C.].—The sepals and petals pale yellowish-green, and deep-coloured labellum.—*Messrs. Backhouse & Son: R.H.S., June* 4.

Pansy (fancy) J. B. Downie [F.C.C.].—Maroon-purple ground, with white margin, the lateral petals being of a more intense shade of maroon.—*Messrs. Downie & Co.: R.H.S., June* 18.

Pansy (fancy) Mrs. Grainger [F.C.C.].—Rich maroon, the top and two lateral petals being blotched with intense brown.—*Messrs. Downie & Co.: R.H.S., June* 18.

PANSY (FANCY) MRS. MACKIE [F.C.C.].—Bluish-violet edged with white.—*Messrs. Downie & Co.: R.H.S., June* 18.

PANSY (FANCY) MRS. NEILSON [F.C.C.].—Violet-blue, with a regular thin edge of white.—*Messrs. Downie & Co.: R.H.S., June* 18.

PANSY (FANCY) RICHARD DEAN [F.C.C.].—Canary-yellow ground, the top and lateral petals being of an intense purplish-maroon.—*Messrs. Downie & Co.: R.H.S., June* 18.

PELARGONIUM ALICE [F.C.C.].—Rose, slightly pencilled dark, and dark top petals.—*Mr. E. B. Foster: R.H.S., June* 24.

PELARGONIUM BLUE BOY [F.C.C.].—Pale-purple lower petals, rich glossy dark top petals; distinct and fine.—*Mr. E. B. Foster: R.H.S., June* 4.

PELARGONIUM CONSTANCE [F.C.C.].—Delicate salmon-pink, with orange and dark top petals.—*Mr. E. B. Foster: R.H.S., June* 4.

PELARGONIUM DUCHESS [F.C.C.].—Orange-carmine lower petals, glossy dark top petals; very fine.—*Mr. E. B. Foster: R.H.S., June* 4.

PELARGONIUM DUCHESS OF CAMBRIDGE [F.C.C.].—Very bright pale red, the top petals darker, and having a dense dark blotch; very bright.—*Mr. E. B. Foster: R.H.S., June* 24.

PELARGONIUM PROTECTOR [F.C.C.].—Light-rose lower petals veined with dark, dark top petals; very fine form.—*Mr. E. B. Foster: R.H.S., June* 4.

PELARGONIUM RED GAUNTLET [F.C.C.].—Bright pale red, with fiery-red top petals, with a large dark blotch.—*Mr. Drewry: R.H.S., June* 4.

PELARGONIUM RUTH [F.C.C.].—Soft rose, with dark blotch on upper petals, and white throat; fine and distinct.—*Mr. E. B. Foster: R.H.S., June* 24.

PELARGONIUM SCOTTISH CHIEFTAIN [F.C.C.].—Orange-carmine lower petals, slightly stained, dark top petals, and white throat; extra fine.—*Mr. E. B. Foster: R.H.S., June* 24.

PELARGONIUM SUNRAY [F.C.C.].—Brilliant pale red: very free-flowering; a very useful decorative plant.—*Mr. C. Turner: R.H.S., June* 4.

PELARGONIUM TRIOMPHE DE ST. MAUDE [F.C.C.].—Bright red, darker on the top petals, and veined with black; a good free-blooming decorative variety.—*Mr. C. Turner: R.H.S., June* 4.

PELARGONIUM (FANCY) THE SHAH [F.C.C.].—Maroon-red, with white throat, fine form; very distinct and good.—*Mr. C. Turner: R.H.S., June* 24.

PELARGONIUM (BICOLOR) ADMIRAL INGLEFIELD [F.C.C.].—Broad chestnut zone and narrow edge of green; a striking variety.—*Messrs. E. G. Henderson & Son: R.H.S., May* 21.

PELARGONIUM (BICOLOR) NORTHERN STAR [F.C.C.].—Broad reddish-chocolate zone, and margin of yellowish-green.—*Messrs. E. G. Henderson & Son: R.H.S., May* 21.

PELARGONIUM (VARIEGATED ZONAL) MARIE STUART [F.C.C.].—A golden-edged variety, with a rich, fiery-carmine zone, shaded with chestnut; fine rounded leaves, and good habit.—*M. T. Pestridge: R.H.S., June* 4.

PELARGONIUM (VARIEGATED ZONAL) MISS FARREN [F.C.C.].—A bright-looking, good-habited, silver-edged variety of much promise.—*Mr. W. Paul: R.H.S., June* 4.

PELARGONIUM (ZONAL) MIRANDA.—A charming carmine and white variety, the flower large, and of fine form.—*Messrs. Bell & Thorpe: R.H.S., June* 24.

Pelargonium (zonal) Scarlet Gem [F.C.C.].—Rich bright orange-scarlet, a fine glow of colour, and good form.—*Mr. G. Smith, Edmonton: R.H.S., May* 21.

Petunia The Shah [F.C.C.].—Banded with white on a rich maroon ground; good form.—*Messrs. E. G. Henderson & Son: R.H.S., June* 4.

Phycella pulchra [F.C.C.].—A showy bulbous plant, with orange-red flowers.—*Messrs. Veitch & Sons: R.H.S., June* 4.

Phyllotænium mirabile [F.C.C.].—Probably an entirely new aroideous plant, the name for which has to be ascertained; it has hastate leaves.—*Mr. W. Bull: R.H.S., June* 4.

Pritchardia grandis [F.C.C.].—A fine stove palm, with broad, deep green leaves, jagged and toothed at the edges; imposing-looking.—*Mr. W. Bull: R.H.S., June* 4.

Rose (H.P.) Madame George Schwartz [F.C.C.].—A fine variety, that might be described as a rich-hued *Victor Verdier*, very fine build and substance.—*Mr. W. Paul: R.H.S., May* 21.

Silene pendula compacta [F.C.C.].—A very dwarf and close-growing tufted form of this useful hardy annual.—*Mr. W. Cole: R.H.S., June* 4.

Tillandsia Zahnii [F.C.C.].—A species with transparent orange-red leaves and yellow flowers; quite distinct in character.—*Messrs. Veitch & Sons: R.H.S., June* 4.

Verbena Edward Perkins [F.C.C.].—Pure white, with large pale rose eye; fine pip and truss.—*Mr. E. Perkins: R.H.S., June* 4.

Veronica diosmæfolia [F.C.C.].—A very free-blooming form, with numerous trusses of delicate lilac flowers.—*Messrs. Veitch & Sons: R.H.S., June* 4.

Viola Lothair [F.C.C.].—A very fine deep purplish-blue seedling of the Perfection type; dense dwarf habit, and very free.—*Mr. R. Dean: R.H.S., June* 4.

GARDEN GOSSIP.

THE Show of the *Royal Horticultural Society* at Bath, which was opened on June 24, and continued till June 28, was held in a most delightful spot in the Royal Victoria Park. The exhibition, if not striking, was at least very pretty, and contained several good and some novel features, such as the introduction of large mirrors at the end of the tent, so as to increase the sense of distance and magnitude. It must, however, for effect, be considered inferior to that at Birmingham, on account of the deficiency in quantity of large plants. Cut flowers made one of the leading features, so good and so plentiful were they staged. Fruit was not so largely shown as was expected, but the vegetables were superb, a better lot possibly never having been staged. The implement department was considerably smaller than usual, and overcrowded. The weather on the opening day was very disagreeable, sharp showers falling at intervals; nevertheless, we are able to report that financially the show has been successful, the receipts at the doors on the respective days being in round numbers as follows:—Tuesday, £70; Wednesday, £510; Thursday, £867; Friday, £408; Saturday, £234, making altogether £2,087, which, in addition to the receipts for the sale of tickets (probably about £1,500), brings up the total to something like £3,600. As the expenses are lighter than those at Birmingham, it is expected that the profits will be larger than at that show.

—— WHAT appears to have been a successful *Congress of Rose Growers* has been held at Lyons, and was attended by all the leading Rose nurserymen and amateurs of that important centre of Rose-raising, England being represented by Mr. George Paul. Some 50 seedling Roses were shown, and of these four were selected to be named and certificated, namely:—*H.P. Madame Vangert* (Lacharme), a fine large flower

of the Victor Verdier race; colour, clear salmon-flesh; a fine Rose. *H.P. Captain Christy* (Lacharme), light salmon, petals edged with white; a new and fine distinct-habited kind. *Tea, Shirley Hibberd* (Levet), a small Tea, of the Madame Falcot race, so valuable for florists, light salmon-buff, beautiful in the bud. *Tea, Marie Guillot* (Guillot fils), a pure white, with large outer petals, which promises to make a fine show Rose.

—— THE perennial Asters, sometimes termed *Autumn Daisies*, furnish some most valuable decorative plants for the open ground during autumn. *Aster Amellus* is one of the best of them, bearing plenty of flowering stems numerously branched at the top, the flowers violet-blue. Neat clumps of this, dotted about shrubbery borders, or at the back of mixed beds, form most welcome masses of a very acceptable hue of colour in our gardens right up to November. A violet-coloured variety of *A. Amellus*, named *bessarabicus*, is a good decorative plant also. There are many other kinds of Aster scarcely less valuable.

—— WHEN, at a recent meeting of the Belgian *Cercle d'Arboriculture*, one of the Professors told his audience of horticulturists that *Sap does not circulate*, and another maintained that there is *no such thing as sap*, a blow was aimed at the practice which is based on the theory of the existence and circulation of a nutrient fluid. The Professors indeed, says the *Gardeners' Chronicle*, were indulging in paradox, but they were taking a most effective way of attacking a vulgar error. The actual process is much more complex than this. There are, indeed, currents within the plant, some taking place at one time, some at another, some in one part of a plant, some in another, according to circumstances of season, temperature, and to the particular work—as wood-making, flower-forming, starch-making, seed-developing, &c.—which is going on; but scientific men have for some time known that the old notion of the existence of an upward current followed by a downward current, like the flow and return in hot-water pipes, required considerable modification; and it was to correct this notion that the statements in question were made.

GARDEN WORK FOR AUGUST.

FLOWERS.

THE flower-garden should, in August, touch perfection. As the nights lengthen, the beauty and brilliancy of the flowers, as well as their growth, should strengthen; they seem throughout this month to enjoy the long, cool nights, while the dews have not yet become heavy enough to rest upon and destroy the flowers of *Pelargoniums*, &c., as they do later in the season. The autumnal dews are much more destructive than rain; being finer, I presume the flowers get a heavier load of water, and cannot bear up against it. The regulation of growth—training, tying, and picking—will still be the routine work among flowers. Each seems a little thing, but it is precisely a succession of such that forms and reveals perfect beauty in the flower garden. Watch the artist at his easel. A touch here, a tint there, a shade yonder, a succession of tiny touches that seem to the uninstructed child's-play, come day after day, and it seems the same thing; but behold! at the end of the season, a work of art that has made that artist immortal! It is much the same in gardens. The impress of neglect must find no place among flowers in August. It is more apt to assert itself in mixed gardens, and on mixed borders, than in the regularly-grouped flower garden; and it needs to be specially guarded against in such positions. All such gardens should be gone over weekly, like the grass, the growth nicely balanced, and any traces of death removed. As to weeds, the very sight of them and the enjoyment of beauty are quite incompatible. Gravel should be at its brightest, smoothest, cleanliest, and nothing renders walks so enjoyable in dry weather as late-evening waterings, with a thorough rolling about 8 a.m.

If any thinnings and prunings can be spared from the beds, they should be used for cuttings. The earlier *Pelargoniums* are rooted, the better they keep for the winter. Among *Roses*, many of the Perpetuals are cut back to induce

late flowers as soon as they have fairly gone out of flower. These prunings of Perpetuals, Teas, Noisettes, Chinas, and other Roses, root firmly in heat, or on a shady border without it, and a quantity ought to be put in, for the cry is still for more Roses. That cry seems insatiable. Should the weather be dry, the late flowers and the plant likewise, will be much helped by a thorough soaking with manure-water. Attend to late buds, and see that they are made safe against wind. Late Briers may still be budded. *Ten-week Stocks* may yet be sown for autumn and winter flowering. Plant out *Wallflowers*, *Brompton Stocks*, *Antirrhinums*, &c., for flowering next year. Sow *Mignonette* in pots for winter flowering. Shift into larger pots, as they require it, *Cinerarias*, *Chinese Primroses*, *Herbaceous Calceolarias*, &c. Plant out or pot up rooted layers or pipings of *Carnations* and *Pinks*. Repot, and divide if necessary, choice *Auriculas* and *Polyanthuses* in pots.

In the *Plant-stove* and *Orchid-house*, little or no fire-heat will be needed. The plants should gradually ripen their growth, and drift into a state of rest. To hasten the latter, shade should be more and more withdrawn. Any late-growing plants of *Orchids* should be grouped by themselves at the warmest end of the house, where they may enjoy special treatment. Most stove plants, unless those for winter work, should follow the example of the Orchids, and be ripened off; but successional plants for winter-flowering must be grown full in the light, close to the glass, to store up strength for plenty of bloom. The annual *Thunbergias* for autumn flowering seem to have gone much out of fashion; but the four or five varieties, from white to orange, are very useful trellis or basket plants, either for the stove or conservatory. *Achimenes* in the latter house must not be over-watered. In fact, all stove plants, or those that love heat, should be kept rather dry, when placed in a cool temperature. This is a good time to pot up a lot of autumnal stock for autumn and winter flowering in the greenhouse or conservatory. Among the more useful plants for this purpose are *Pelargoniums*, double, single, zonal, and variegated; *Heliotropes*, *Roses*, *Petunias* double and single, *Lobelias*, and a few other annuals, such as *Schizanthuses*; *Celosias*, *Cockscombs*, *Balsams*, *Rhodanthes*, and *Clintonias* are also very useful for autumnal furnishing. Attend carefully to hard-wooded plants outside, and see that they are kept clean, free from the pest of worms, and carefully watered.—D. T. Fish, *Hardwicke*.

FRUITS.

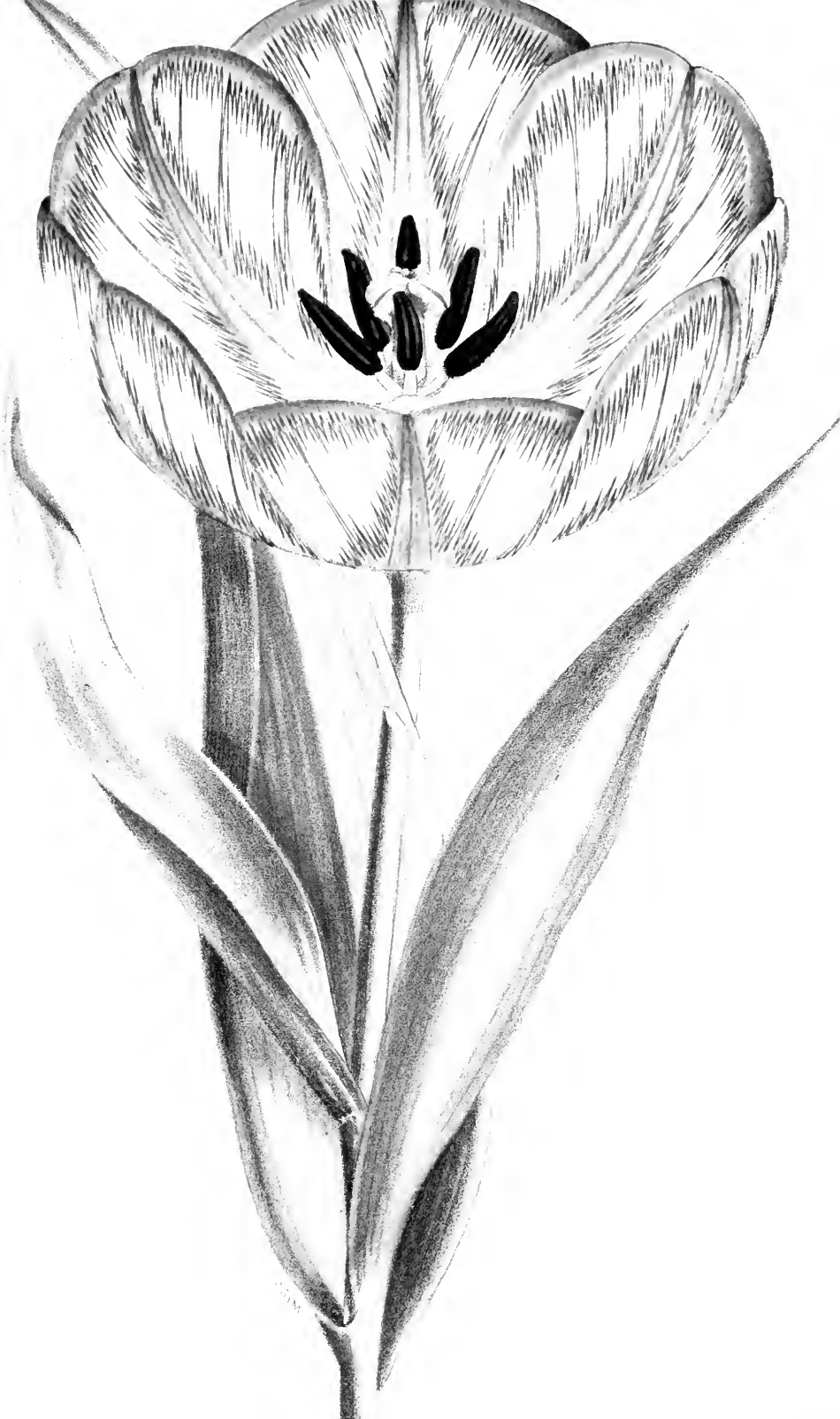
In-Doors.—*Pine-apples:* The plants for the autumn and winter supply of fruit should now have every attention: they will be best managed if they can be got together in one house; give them a steady bottom-heat of about 85°, and attend carefully to the watering; keep a dry atmosphere until all are out of flower; and give air freely in fine weather. The plants intended for fruiting next spring should now be put into their fruiting pots. The whole of the young stock should have their final shift for the season before the end of the month; keep them near the glass, and be careful not to crowd them. *Vines:* All houses containing ripe grapes should be kept cool and dry, with an abundance of air both night and day. Keep a little fire-heat in all late houses; keep also as dry an atmosphere as is consistent with the health of the Vines, and give an abundance of air; by these means, if the borders are all right, you will get well-coloured and well-flavoured grapes, and the wood will be properly matured. Shanking and mildew are principally caused by cold wet borders, want of air, and a stagnant atmosphere. *Peaches and Nectarines:* The wood in the early house will now be ripe, which is easily known by the leaves falling off when slightly touched; all the air possible should be given both night and day. As soon as all the fruit is cleared out of

the late houses give the trees a good syringing, and pay every attention to the ripening of the wood. *Figs:* As the second crop of fruit will now be approaching maturity, water should be carefully administered; give them abundance of air. *Melons:* For ripening fruit attend to previous directions; see that late crops do not suffer for want of moisture at the root, nor for bottom-heat; keep up the linings, and give air freely.

OUT-DOORS.—Attend to the directions given last month. The summer pruning, nailing, and dressing of all fruit trees should now be brought to a close; and attention given to the ripening crops. When the fruit begins to ripen, expose it as much as possible to the sun, by removing any leaves that may shade it. Protect all *ripening fruit* from birds and wasps. Cut away all the *Raspberry canes* which have done bearing. Make fresh plantations of *Strawberries*, and if not already done, shift at once into their fruiting pots all the young plants that were layered last month in small pots.—M. SAUL, *Stourton, Yorkshire.*

VEGETABLES

A VERY important crop for winter use, namely, *Winter Spinach*, must be sown early this month. A piece of open sunny ground must be prepared, and good large sowings made weekly, in succession, from the 4th or 5th, until at least three sowings are completed. Choose a dry situation, and one where the soil is tolerably mellow, and will admit of being hoed with freedom even during the moist winter season. The seeds should be sown in shallow drills about half an inch deep, and kept constantly moist until they have germinated. Make successional sowings of various subjects in the order named—that is, in regard to the wear of the month. Make a small last sowing of *Peas (First-crop)* upon a warm sunny border; also of *Dwarf French Beans.* Draw the remains of autumn-sown *Onions*, and in the case of light, stony soils, transplant thereto any late *Broccolis, Kales, Cabbages*, or *Coleworts,* after having first hoed it, without any digging or manuring, which it is an error to attempt at this season of the year. Draw *Shallots* and *Garlic*, and place them to dry, even in instances where, owing to the lateness of the season, they are still somewhat green. Bend over the necks of the summer crop of *Onions*, and so induce them to bulb more freely. Sow seeds of *Onions* to stand through the winter for the early summer supply; the largest and finest kind is the *Giant Rocca*, of modern introduction—this, where size and appearances are considered; the finest-flavoured one for salads, &c., being the older *White Spanish*, which may be treated very successfully in the same way. Earth up the earlier *Celery*; this may be done all at once where no preliminary measures have been taken, and yet an early supply is needed; give the plants a thorough root-soaking with manure-water previously. Gather and dry such *Herbs* as *Sweet Basil, Pot Marjoram*, &c., as soon as the first sign of blooming appears. About the 25th of the month sow seeds of the *Cauliflower (Early London);* sow thinly, and upon an open sunny spot. Make successional sowings of *Carrots* of the *Short-Horn* or *French-Horn* types; and of *Lettuces* of the *Brown Cos* and *Hardy Cabbage* kinds, the latter to be transplanted when sufficiently large for the operation. Collect horse-droppings for *Mushroom* beds, and by placing them into a shed to dry prepare them for the early autumn beds. Bring the planting of all kinds of *Broccolis* and *Winter Greens* to a conclusion at the earliest time possible. Fork and hoe well amongst all growing crops, nor omit to mulch such as are about to mature their crop. Should a dry period set in, as it often does about this time of the year, give root-waterings to all subsequently. Particularly attend to the destruction of all *Weeds*, as if they are permitted to get the upper hand at this season, much unnecessary labour will be inherited anon.—WILLIAM EARLEY, *Valentines.*



J. L. Macfarlane Del et Lith.

F. Waller In

Tulip Thomas Moore

THOMAS MOORE TULIP.

WITH AN ILLUSTRATION.

WE have to thank Mr. Hepworth, of Crossland Moor, Huddersfield, for the flower from which our illustration has been prepared by Mr. Macfarlane. It belongs to a class of Red Bizarres which Mr. Hepworth and others wish to have separated from the Dark Bizarres, in the same way that Roses are separated from the Byblœmens amongst white-ground flowers. This subject has on more than one occasion formed the subject of comment in the pages of the FLORIST, and seems to point to a very natural and feasible classification, characterised by the presence of lighter and darker-coloured markings, both among yellow-ground and white-ground flowers. Our illustration, as just noted, belongs to that group with the lighter-tinted markings on the yellow ground.

This flower, which Mr. Hepworth has named THOMAS MOORE, was, as we learn from the raiser, obtained from a pod of seed which resulted from the fertilising of President with pollen taken from Everard. From the same pod of seed several other fine flowers both of the flamed and feathered class have been obtained, and have broken into colour. One of them, a superb feathered Red Bizarre, would have been portrayed along with the present variety, but for an accident which spoiled the flower before it reached the hands of our artist. The brilliant colour and fine marking of the present representative of the class of Red Bizarres will be at once seen from our illustration.

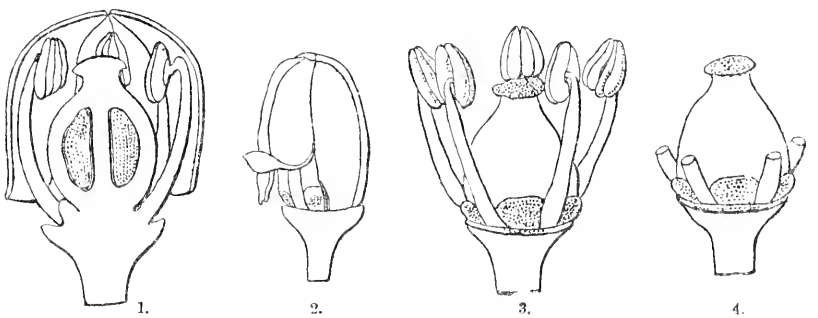
We print subjoined (p. 196) some remarks by Mr. Hepworth on the points which go to constitute perfection in a Tulip.—T. M.

VINES AND VINE-CULTURE.—CHAPTER III.

WE now come to raising Vines from *Seed*, and their hybridisation. Vines are so easily propagated from cuttings, &c., as already explained, that the raising of them from seed is not often had recourse to, excepting for the purpose of obtaining new varieties. Vines reproduce themselves from seed, *i.e.*, if the seed of a certain variety be sown, that same variety will most likely be again raised. They do not sport or vary, or but to a very limited extent, excepting they are artificially impregnated. A seedling Vine may perchance have a little more vigour in its constitution, and so produce larger fruit for a time, and be consequently considered a distinct variety. This accounts for the many varieties of grapes sent out as distinct, which ultimately prove to be nothing but the old sorts; for excepting great care has been taken to properly cross or fertilise the flowers, the chances are a hundred to one that nothing new will be raised.

The flower of the Grape Vine is so constituted that its self-fertilisation is most easily and readily accomplished. There is almost always an abundance of pollen, and circumstances being favourable, there are but few varieties that do not set every flower in a natural manner. It is in this facility of self-fertilisation that in a great measure lies the difficulty of its cross-fertilisation.

Fig. 1 represents a longitudinal section of the flower of the Grape Vine, showing the pistil and stamens as they are situate just previous to its expansion or opening. It will be observed that the whole is at this time shut in by a sort of sheath or "cap," as it is called. Fig. 2 represents the same flower a stage further advanced, where the flower shows the first signs of opening. When seen in this condition in bright sunshine, it is only a question of an hour or two for it to fully expand, for the "cap" to be thrown off, and for it to appear as in fig. 3, so rapidly do the changes take place.



FLOWER OF THE GRAPE VINE.

The act of fertilisation is effected at this period. The various segments of the sheath or "cap" roll up one after the other, until at last it rests on the point of the stamens and pistil. By a sudden jerk it is then thrown off, the pollen is projected on to the pistil, and the fertilisation is effected.

To hybridise, therefore, or to cross-fertilise one variety with another, it is necessary to take measures in advance of this, so that self-fertilisation be not effected. To accomplish this, select, some days previously to the opening of the first flowers, the bunch which is to be operated on as the female or seed-bearing parent. Cut away all the flowers, with the exception of ten or so, and have these enclosed in a thin but close muslin bag, which must be sufficiently close to keep out all foreign pollen. It is necessary to watch and examine these flowers minutely until they appear as in fig. 2; then, being provided with a pair of finely pointed scissors or pincers, pull off the cap by force, and immediately cut away the stamens, as shown in fig. 4. This is a very neat-handed, but difficult operation; it requires the greatest care and patience, all the parts being so small, and, as a rule, difficult to get at. It is, indeed, a very arduous task to do all this without injury to the pistil or ovary. To add to the difficulty, the bunch to be operated upon is mostly rather difficult to reach, and having to be always done in the brightest and hottest of days, in the forenoon, what with the perspiration almost blinding one, and the reaching and straining, it is one of the most trying of garden operations.

As soon as the stamens are all cut off from those flowers which may be fit, get ready the pollen of the sort selected for the male parent, which should be in flower at the same time. This is best applied by means of a small camel's-

hair pencil, and after the application, enclose the fertilised cluster in the muslin bag again, and the operation is completed. The same ordeal will, however, have to be gone through daily, or twice a day, as the flowers may become fit, until they have all been manipulated. If a single flower be allowed to expand naturally, as in fig. 3, it may ruin the whole experiment.

The choice or selection of stocks, or parents from which to raise seedlings, must be mainly determined by fancy. A tolerably safe rule to abide by is to have good constitution in the female parent, in order to secure a good-constitutioned progeny. Whatever peculiarity it is intended to introduce, let that belong to the male parent.

It has been observed that the result of the first cross has very often been the introduction of a great mass of rubbish, but that when these crosses are again crossed, the most decided and important results are obtained. No estimate can well be formed as to the results of any particular cross. In the progeny the characters of both parents frequently appear, while sometimes that of neither can be traced. As a rule, the seedlings are generally of very inferior quality, and most heterogeneous, all sorts being produced—black, white, round, ovate, &c. It is well to sow the seeds as soon as they are ripe, and grow them on as rapidly as possible; for if the seeds are kept until spring, a great many of them may perish, as they soon lose their vitality.

Seedling vines are tiresome plants to fruit in pots, although it may seem a convenient thing to do. They do not fruit readily or freely, and if (as is well known) a pot-plant does not show fruit, a fresh plant has to be raised, thereby entailing much trouble and the risk of losing the variety. The best plan, therefore, the surest and most satisfactory, is to plant them out in some temporary position, where they can be allowed to grow and fruit when they will—most likely in the second year—and to get thoroughly tested before being condemned or approved.—A. F. Barron, *Chiswick*.

THE FERN-LEAVED BEECH.

In park scenery and in picturesque views, as well as for single specimens in extensive pleasure gardens and arboretums, the Fern-leaved Beech, *Fagus sylvatica asplenifolia*, takes a very high character as an ornamental tree. Perhaps an undulating surface, intervening between the object and the observer, and which is so much appreciated in a landscape view, brings this fine tree out even to greater advantage and perfection, because it is sufficiently distinct in its character to make it an object readily discernible in the distance. It is not easy to call to mind a tree so suitable as this is to place in the foreground of an ornamental plantation, or to dispose here and there by the side of a carriage drive, where a fair proportion of space can be allotted to it. Although its foliage is as green as that of the Elm or the Lime, yet when those trees are associated with it so as to form a background towering considerably above it, the distinct habit of growth peculiar to the Fern-leaved Beech makes it a conspicuous feature that

few can fail to look upon with pleasure. The body of the tree generally grows as straight as an arrow, and in order to make a handsome tree, its branches should start out just above the browsing line of cattle; they grow in a horizontal direction, as if trained for the purpose, and the leader grows in proper proportion to its branches, which gradually taper from the bottom towards the top, in such a regular manner as to give it a cone-shaped outline, its diameter through the lower branches being generally about equal to its height.

I am not able to speak of the value of its timber commercially, although, from the fine grain and hardness of the wood, as well as from its clear and sound appearance, my impression is that it will be quite equal if not superior in usefulness to most of its class.—THOMAS RECORD, *Vinters Park*.

THE POINTS OF PERFECTION IN TULIPS.

AS promised in my paper on the Tulip at p. 114, I now proceed to give my individual opinion as to what constitutes a first-class Tulip. In doing this, I trust it may be fully understood that I have no desire to set myself up as knowing more of this matter than my brother florists, for others who may have had the same amount of practice and of opportunity, should have acquired as clear an insight into the question as I can possibly have done. At the same time, we have amongst us individuals who are somewhat opiniated, and who cannot, or will not, be persuaded to abandon their old notions. These matters, however, I leave for the present, and proceed with the object I have in view, viz., to state what I consider to be the properties requisite to make up a first-class or model Tulip, fit for the exhibition table.

1. I say that the flower should be of *fine form*, that is, when sufficiently open for exhibition it should be of the form of half a hollow ball, and quite even.

2. The flowers should be *stout* of substance, with *rounded* and *smooth-edged* petals.

3. The base of the petals and the stamens should be *perfectly pure* and unstained, and the *stamens bold* and strong, carrying jet *black anthers*.

4. The *marking should be clear and definite*, be the colour what it may. In a feathered flower, whether it be a flamed or pencilled feather, the colouring round the edging of the petals should be solid, the ground-colour not breaking through to the edge; it should also be a little more dense or solid at the top of the petal, a thread of colour running round the edge of the petal to the base. The same points are requisite in a flamed flower, with the addition of what is called a beam of solid colouring, which should extend down the centre of the petal from the top nearly to the base, leaving a space of ground-colour at the base of the cup not less than the size of a sixpence, quite clean and pure. From this beam fine pencilled streaks of colouring should branch out, reaching nearly to the feathering at the edge of the petals, which feathering must be solid and unbroken, such as we get in a perfectly feathered flower.

5. The *ground-colour* should be *clear;* I look upon this as one of the most

essential properties—one that must be insisted on before we talk of a model Tulip. In the white-ground classes, whether Roses or Byblœmens, we want a clear, unsullied, snowy white; and in the yellow-ground class or classes, whether darks or reds, and whether of a lemon-yellow or an orange-yellow, we must have the colour clear and glossy in appearance, without speck or shade.

Moreover, besides clearness and brightness in the ground colour of Tulips, before we can get at anything like perfection we must have solidity in all the colours and markings, a shining brightness as though they had a coat of varnish put upon them. Take the Rose class first: the colouring matter ought to be of a bright rose colour, the nearer approach to a scarlet the better, upon a pure white ground. In the Byblœmen class, the colour ought to be a bright purple, so dark that the nearer it approaches to black the better, and that upon a similarly pure snow-white ground. In Dark Bizarres, the colouring ought to be of a dark cinnamon-brown, the darker the better, upon a pure bright lemon ground, this ground being more common in the dark class than it is in the reds. Finally, in what we may term Red Bizarres, the colouring ought to be of a bright crimson-tinted red, approaching to orange-scarlet upon a yellow ground, more orange-tinted than we generally have in the dark class of Bizarres.

A model Tulip should, therefore, combine the following essential properties, each of which should be perfect in its way, as already noted:—1, Shape; 2, Substance, roundness, and smoothness of petals; 3, Perfect purity in the ground-colour, inside and out; 4, Correct marking, whether feather or flame, all the petals being marked in the same style. On a future occasion, all being well, I will endeavour to give in each class the names of half-a-dozen of what I consider first-class flowers—those which most nearly approach the model I have endeavoured to explain. Meanwhile, I shall have something to say on the Auricula, its properties, culture, &c.—J. Hepworth, *Huddersfield.*

AQUATICS.—Chapter XI.

THE well-known *Calla æthiopica*, now usually called *Richardia æthiopica*, was introduced in 1731. It is a native of South Africa, and is generally regarded and employed as a greenhouse plant. Moreover, when grown in pots it is very ornamental when in flower, and well suited for conservatory decoration, besides which it has somewhat of a "classic" cast about it, which adds considerably to its attractiveness. It is, however, as a hardy aquatic that I am now about to treat of it, and this is really its proper position. The fact of its doing well out of the water is only a proof of the yielding nature of the plant. When planted in 18 in. or 2 ft. depth of water, so as to be out of the reach of frost, it is perfectly hardy. There is strong evidence in support of this assertion, as I have known it for over a quarter of a century flourishing in a strip of water in a garden in Surrey, where it annually produces scores of its chaste white spathes, with yellow spadices, surrounded by the bright green hastate foliage. After being once planted it requires no further trouble, but will go on increasing year by year.

It should be planted about 3 ft. from the margin of the pool or pond, in order to give room in front of it for some of the smaller sorts of Aquatics, such as the *Villarsia nymphæoides*, *Menyanthes trifoliata*, *Hottonia palustris*, and others of similar habit. It is also well adapted for growing in tanks in the conservatory or greenhouse.

At the Cape it grows in ponds and swampy places by thousands; and the thick fleshy rhizomes are there used by the colonists for feeding swine, for which purpose they are well adapted. When cut through, they very much resemble potato tubers, and are of the purest white; and the swine are said to devour them ravenously, and to thrive upon them.

Calla palustris is a North-American subject, which abounds in sphagnous swamps in Canada and Pennsylvania, therefore no questions need be asked as to its hardiness. It was introduced to this country in 1768. The fleshy stems are creeping, somewhat less than an inch in diameter, and from these the leaves, which are broadly cordate, are produced alternately; they are very glossy, and about 4 in. across. The spathe is white, about one-fourth of the size of that of the *C. æthiopica;* the spadix is also much shorter, and of a pale greenish white. Being of prostrate habit, this plant is best adapted for the margins of ponds where some of the stems can rest on the bank, and as they emit abundance of roots, they will soon become fixed. It has a particularly neat appearance, and well deserves a place in the most select collections.—W. BUCKLEY, *Tooting.*

THE CRANBERRY.

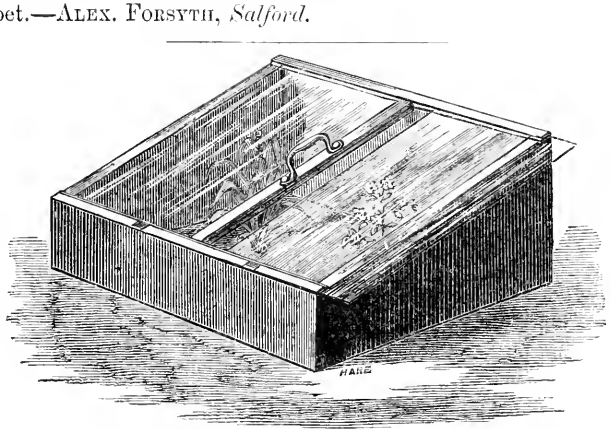
THERE is a plentiful supply in our Manchester market of this beautiful native fruit to-day, being the 20th August. I notice the date particularly, as it is always important to the grower to have an approximate estimate of the time he may look for a supply. They are retailed here at 8d. per quart, and come from Shropshire; and as there is but one hill—the Wrekin—in the county, they ought to hail from thence.

The Cranberry is the *Oxycoccus palustris*, better known as *Vaccinium Oxycoccus*, and we find it growing in turfy bogs along with Sphagnum and other moisture-loving plants. Its beautiful red berries give it a charm to every boy who has once "trod the wild" in search of it; but the person encumbered with shoes and stockings pursuing this trade had better put them on his back, for it is on "wet-foot common" that the treasure is to be found. The American Cranberry, *Oxycoccus macrocarpus*, bears a much larger berry than our native Cranberry, but is a larger and coarser plant, being at least three times the height of the British species. The culture of both in the garden is, however, for all practical purposes the same. The late Mr. Fox, of the nursery, Wetley Rocks, near Leek, in Staffordshire, excelled in the culture of Cranberries, and that with little effort, beyond an extra supply of water to the bed they grew in. His greatest difficulty seemed to be to keep the blackbirds, &c., from carrying them off, for when he showed them to visitors, he had to take off the garden nets that covered them;

and it was far easier to cover the British species, only three inches in height, than the American one.

The Cranberry as an ornamental plant will do well in the clumps of American plants as a carpet in front of the taller plants, and where birds are encouraged these bright red berries will attract them to perfection; but where the fruit is to be protected, it is no more trouble than Strawberries, and they may be secured in the usual way with some old herring-nets, that will do this work for years. In most kitchen gardens there is either a pump or a water-cock, and usually a good deal of waste water; now if this could be so directed as to get into the Cranberry bed, it would do all that is needed for the water supply; and by going to the native habitat and getting sods of the British Cranberry, you will get the plantation complete the first year. With peat and sand and plenty of water, success is certain.

The American species has to be got from the nurseries, and seems by comparison made for the Continent, whilst our neat little native seems suited to our isle. Its name when translated signifies Acid Berry, and it does credit to its calling, so much so, that if sugar had not been so cheap, I should not have named tarts made of this native fruit. Smith describes this plant as "depressed," otherwise bowed down, yet it is one of our evergreen shrubs, although only a Bantam—a botanical pet.—Alex. Forsyth, *Salford.*



PORTABLE HAND-LIGHT PROTECTORS.

THIS is the name given by Mr. Rendle to a very useful form of Plant-protector, which takes the place of the old hand-light. They are very handy, very light, and easily movable by means of the handle fixed to the middle bar; and they are thoroughly efficient, since they are warmer than those hand-glasses which have glass sides, while the light admitted by the top glass is sufficient for most purposes for which such a shelter is required. We have found the lean-to form here figured, very useful for the growth of specimens of dwarf half-hardy plants, or plants which do not bear exposure to the parching atmosphere of our summers, and they have this special recommenda-

tion, that they can be set either facing the south or the north, as the one aspect or the other may be found most suitable to the plants grown beneath them. For propagating purposes, either outdoors or in the propagating house, they are perfectly adapted. Indeed, they are efficient for all the purposes for which a common glass hand-light may be used, with the additional merit of being more convenient to handle, warmer, and more readily ventilated, ventilation being afforded by sliding the glass aside as much as may be required.—T. M.

VALUE OF ORCHARD-HOUSE PRODUCE.

NOTWITHSTANDING all that has been said and written in favour of Orchard-houses, they have not become popular with cultivators in general, and though good fruit is sometimes grown by this method, yet in the majority of cases it is inferior to what is met with from trained trees. A larger variety can, no doubt, be had from a small space by the pot system, and it may be interesting to an Amateur with plenty of time on hand to spend a few hours occasionally in his Orchard-house, where he can note the various habits of his fruit-trees, watch their progress, compare the flowers of one kind of fruit with those of another, and be able to point out the features which distinguish them, which is, however, by no means a simple task, even when one's powers of discrimination are strong. But to the individual who desires to have plenty of fine fruit at a small cost, and with as little labour and attention as possible, I say Orchard-houses cannot be recommended,—I mean, under the ordinary system of growing dwarf trees in pots, and giving them the same attention as is accorded to a greenhouse plant. Ornament is one thing, but utility combined with economy is another. It is an argument against its being a profitable system, that market growers do not adopt it. They cannot afford to have a number of starvelings in pots, requiring daily watering and syringing, besides fumigating, clearing, airing, &c. In the best managed structures, where the highest value can be put on the produce, the returns, I fear, are not equivalent to the outgoings; and the fine crops of fruits we so often hear of are, I fancy, oftener seen in print than realised in practice—pits and other structures being sometimes used as auxiliaries to keep the Orchard-house well filled, and the barren trees being exchanged for others in full bearing. I have known proprietors refer to these well-filled houses, and demand a reason why they cannot have their houses full of fruit, never suspecting for a moment that many fruitless trees have been carried out, and their places filled from the "reserves."

In a small Orchard-house here (70 ft. long and 18 ft. wide) we have had a quantity of good fruit, which has been of great service in helping the dessert; but if I had wanted the same quantity for myself, I could have bought it at less cost by going to market. To the keen pomologist the pleasure of growing the fruit, noting the habits of the various kinds, &c. (as already mentioned), ought to be remuneration in the fullest sense; but proprietors who employ gardeners to supply their tables with fruits of finest quality and at least expense, will be

disappointed if they look for it from trees grown in pots. If it is necessary to have variety, plant the trees out in soil made firm like a floor. They can then be kept as dwarf as in pots, and require less than one-fourth of the attention usually required by the same number of trees grown in pots. They are not so liable to drop their fruits at stoning time, and the saving of pots is no mean item off the expenditure. Trained trees will always be in favour, and if variety is really necessary, it can be had from single, double, or triple cordons—a system which is neat and productive.

The "Truck" system will not, I am inclined to think, become popular, even with those who are in favour of Orchard-houses in the ordinary sense. The theory of this system appears, at first thought, advanced and sound, but I fail, from practical experience, to see any advantage that is to be gained by it. The first expense, indeed, is considerable; while from the pots hanging in the air, the labour is greater than is necessary when the pots stand on the ground. The space outside, left for the rails to run on, is objectionable in places where space is limited, as with amateurs generally. The taking of the plants out to be cleaned, &c., is not necessary, as that work is reserved for wet weather. To run the trucks out in order that they may have the falling rain, requires the efforts of two men, and I have more than once seen these poor fellows get a better soaking than the trees—at least those that were drawn out last, the rain being sometimes off before they are all out; while if they are left out for some time to atmospheric influences, a coating of mildew may be seen on the peaches and nectarines, especially if they have stood a night in the open air. Such has been my experience on two occasions, and a syringing with water in which a quantity of sulphur was mixed had to be administered, and was effectual in destroying the pest. Another evil which we have observed is, that when the roots grow through the pots into the cold iron basins, the trees suffer, if they do not ultimately die.

It will be observed that while I am not in favour of Orchard-houses in the usual sense of the word, I do not say that good fruit cannot be grown in them plentiful and of good quality, but not better than from trees planted out, trained or otherwise, and I admit that if I were an amateur with plenty of means and time to spare, and expense was no object, an Orchard-house would be with me a special object.—M. T.

DRACÆNA WEISMANNI.

THIS variety is one of a set of marked novelties of recent introduction, in which, besides the red variegation, so familiar in *D. terminalis*, and its many forms, there is superadded a series of creamy-white streaks and markings, which in combination with the red produce a very pleasing effect. Messrs. Veitch and Sons, by whom this variety was introduced, describe it as "a very distinct and elegant *Dracæna*, with gracefully drooping leaves of a light bronzy-red colour, with red margins, the colour in the younger leaves breaking

out into creamy-white. The plant is of free growth and of great merit." It has won two first-class certificates.—T. MOORE.

DRACÆNA WEISMANNI.

GARDEN LITERATURE.

OUR American friends send us a book of instructions on WINDOW GARDENING*, which, as it has reached a sixth edition, we may conclude has been found useful in America. It has been written, we are told, specially as a help and an encouragement to ladies and all flower-lovers, to assist them with judicious hints and suggestions in their efforts to make home more beautiful by the use of plants around their windows and balconies. One chapter is devoted to designs for the accommodation of the plants, their construction and location;

* *Window Gardening; Devoted Specially to the Culture of Flowers and Ornamental Plants for In-door Use and Parlour Decoration.* Edited by H. T. Williams. Sixth Edition. New York: H. T. Williams. 1873.

another to the general management of their contents; and another to the special care required in winter, spring, summer, and autumn. Insects, and how to kill them, are treated of, respecting which a good old maxim is introduced—"an ounce of prevention is worth a pound of cure." Among plant-pests unfamiliar to us by name are the *Verbena mite* and the *Carnation tritter*, both very minute and very destructive. Then come chapters on Propagation from Seeds, Cuttings, &c., Propagating-boxes, Window Pots and Plant Stands, Conservatories and Greenhouses. The second part, occupying considerably more than half the book, is devoted to the plants for Window Gardens. The whole is profusely illustrated, the figures being very familiar to those who see our principal nursery catalogues and sundry books bearing on the same subject. The book is, however, full of information of a nature likely to be useful to the class for whom it is got together.

The Art of Botanical Drawing* is the title of a small brochure, in which Mr. Burbidge, some of whose sketches are familiar to our readers, offers to botanical students some instructions based on his own experience in the art of botanical drawing. The first great essential, he tells them, is *correctness*; hence the student must practise drawing systematically, and persevere until this object is attained. Then, after recommending the attainment of a practical knowledge of botany, in order that he may know what to draw, he is told that "the mere mechanical difficulty of drawing any object will disappear in proportion to the student's powers of *seeing* and *understanding*. These general hints are followed up by more precise directions; how to deal with leaves, with flowers—regular flowers being first treated on, and then the irregular—and with fruits and seeds. Other matters referred to are analysis of flowers, arrangement, shading and colouring, and picturesque studies; and finally, there are a few pages of hints and suggestions, devoted chiefly to drawings on wood and on stone. The author very properly acknowledges the use he has made of some papers and sketches on the same subject by Mr. Fitch. Altogether it is a handy little book, and likely to be useful to beginners, for whose use it is intended.

The subject of Transplanting Large Trees† is often one of considerable importance, and hence any suggestions conducive to a successful issue are valuable. From this point of view we may welcome the little book referred to in this paragraph, as explaining a very simple and straightforward, and apparently efficient mode of carrying out this kind of work. The season recommended for transplanting large trees is autumn and spring, and for evergreens the summer, when the soil is warm and moderately moist. Deciduous trees should not be moved just before the bursting of the buds, as some at least of them will then bleed, so that it is better then to wait till the leaves begin to unfold, if the work cannot wait till autumn. The book is devoted to a detailed explanation of the apparatus employed, and of the means of applying it. As regards the result, out of over

* *The Art of Botanical Drawing.* By F. W. Burbidge. With 20 Engravings designed by the Author. London: Winsor and Newton.

† *Transplanting Large Trees and Plants.* By Charles R. Kelly, Landscape Gardener, Tarporley, Cheshire London: Allen.

200 trees there has been but one total failure, and only three or four which have not grown as well or better than before. We recommend it as a very useful little handbook.—T. M.

THE PHAIUS FOR DECORATIVE PURPOSES.

AMONGST the subjects grown as specialities for winter blooming, these old neglected plants are not nearly so often met with as they deserve. With a largely increasing consumption of flowers, for cutting, and the various purposes of decoration, we find our resources are often severely taxed, both as regards quantity and variety, more particularly so in the winter months, when the species of *Phaius* may be brought forward to render good and lasting service. It is not so much the brilliancy of their inflorescence that charms the eye, as the distinct and stately nobility of aspect they present in association with other plants, and this renders them both striking and pleasing objects. Moreover, these terrestrial orchids are so very accommodating in point of management, requiring no extra amount of skill nor special expedients to grow them perfectly, that it is altogether needless to say much upon that head. I will therefore confine myself to offering a few general remarks.

To be perfectly successful in flowering them early, it is necessary to promote early growth, and consequently early maturation. Therefore, immediately after blooming, the earliest section should be turned out of their pots, every particle of exhausted or sour soil being removed, at the same time cutting away any decayed or bruised roots, and be repotted in a compost of about equal parts of peat, turfy loam, and dried cow-dung. The peat and loam are to be pulled to pieces with the hand, not over fine, all the finer portion being rejected, which is best done by sifting through a large mesh riddle; while the manure must be broken fine and rubbed through a half-inch-mesh sieve. These ingredients are to be well incorporated, adding sufficient sand and charcoal to maintain porosity. The pots must be freely drained, and the sizes regulated in a great measure by the health and size of the roots, as well as to suit the different purposes for which they may be required. I find that, as a rule, plants in 12-in. pots produce from 15 to 20 flower-stems, averaging from 4 ft. to 5 ft. in height. They also flower freely in smaller pots; and for room embellishment, for which they are well suited, a portion should always be grown in pots of 6-in. diameter and upwards.

The pseudobulb-like bases of the shoots require to be divided with care, so as to break the roots as little as possible; and in potting, the soil must be worked firmly yet carefully amongst the fleshy roots, the plants being afterwards placed in a brisk humid atmosphere of about 70° to 80° by day, and watered sparingly at the roots until fresh growth is freely established, when an abundance must be given both at the root and from the syringe, so as to promote vigorous growth.

I make it a rule as soon as the young growth is fully established to cut away the whole of the old foliage, as it is no longer necessary to the support of the plant; and by cutting it entirely away, scale, or other insects which may have

Fitch lith

J. N. Fitch imp

Malortiea simplex.

found a lodgment, are got rid of. At first, shade slightly for a few hours from the meridian sun ; but as the growth becomes matured, expose the plants to the freer action of sun and air, reducing the supply of water to the roots, so as to encourage a sound and early maturation, but in promoting this, be careful at the same time that the foliage does not suffer, for without this is preserved in perfect condition, the real effectiveness of the plant is marred.

To facilitate early flowering, place the earliest ripened section where they can be afforded bottom-heat, frequently stimulating them with weak manure-water at the root, and syringing them over head. Under these conditions they will quickly put forth their flower-stems, and as soon as the flowers show signs of expanding they should be removed to a more airy position to harden, when they will stand for months in a moderately warm conservatory or sitting-room. The species best adapted for early flowering are *Phaius grandifolius* and *P. Wallichii*. —Geo. Westland, *Witley Court.*

MALORTIEA SIMPLEX.

WITH AN ILLUSTRATION.

THIS is an elegant genus of small-growing Palms, nearly allied to both *Geonoma* and *Chamædorea*, and like those plants, forms dense masses of under-growth in the South-American forests. The *Malortieas*, like the *Geonomas*, seem to form the connecting link between the fan-leaved and pinnate sections of the great Palm family, and have bright, glossy-green pinnatisect foliage, irregularly lobed and serrated along the margins. The lobes themselves are often connate, or joined together in the centre, so as to form lattice-like slits or openings on each side the mid-rib, near the base of the leaf. We have only one or two species at present in cultivation, and in all probability these are nearly related to each other. The present species has been figured and described as *M. simplex*, *M. gracilis*, *Geonoma lacerata, G. fenestrata*, and *Chamædorea lacerata*, and is occasionally met with in botanic gardens and private collections under all the above names. It forms an elegant decorative plant for stove culture, and is easily propagated from suckers or offsets, which are freely produced by well-established plants. Like its relatives, the *Geonomas,* it grows well in a moderately warm and humid stove temperature, in a rich compost of fresh maiden loam, leaf-mould, and sand. If the loam is heavy, one-third of fibrous peat may be added, and a larger proportion of coarse sand. Well-grown specimens are from two to four feet high, and one dense mass of elegantly cut bright green foliage. Our illustration, taken from a nice specimen grown at Manley Hall, near Manchester, shows the habit and general contour of the plant, which is very graceful when grown with a single stem. Its fruit, which is freely produced on well-established plants, is of a bright red or crimson colour, and like that of the *Chamædoreas*, highly ornamental in contrast with the bright green foliage. It is a plant worth adding to every collection where foliage plants of permanent interest are appreciated.—F. W. Burbidge.

THE STRAWBERRY SEASON IN 1873.

NEVER in my experience has a more plentiful crop of Strawberries been gathered here than that of this year. The season commenced with the *Black Prince*, followed by the *Old Scarlet*, an excellent small variety for preserving. The *President* bore the heaviest crop of any, the beds being paved with its large fruit; but this variety has the fault of the fruit rotting, if not raised from the ground on wires or sticks. *Sir Joseph Paxton* and *Eclipse* likewise showed very heavy crops, as did also *Sir Charles Napier*. *Lucas*, a Belgian variety, was one of the very best as regards size and flavour, and it carries well. *The Duke of Lancaster*, a new Lancashire seedling, I have grown for the first time this year, and it proves to be a good sort, both for flavour and size. That fine old kind *La Constante* I never had finer; so also *Ingram's Prince of Wales*, with its peculiarly rich flavour. *Marguerite* I have discarded, for although the fruit is large and fine, they are very soft and pulpy, and have but little flavour.

On the strong brick-earth soil of the kitchen garden here, the *British Queen* and the *Mr. Radcliffe*, two varieties nearly alike, always grow and bear well; and this year they have produced enormous crops. *Dr. Hogg*, another sort which seems to do best in a strong soil, had very large fruit, many of them turning the scale at two ounces. The smaller-sized fruits of this kind—those that ripened the latest, were the sweetest and most delicious in flavour of all the strawberries I have ever tasted. The two latest varieties, now just over, are *Cockscomb* and *Frogmore Late Pine*. The latter sort has always been a shy grower with me, but its fruit is of fine flavour, and comes in about the latest. *Cockscomb* has been of great size this year, with some of its fruit; and it likewise has the property of the smaller fruit, being the best flavoured, and keeping up a succession till very late. —WILLIAM TILLERY, *Welbeck*.

DELPHINIUMS IN POTS.

SEVERAL attempts have been made—for instance, at the provincial exhibitions of the Royal Horticultural Society—to encourage the cultivation of the *Delphinium* in pots, but somehow or other, the results have not been particularly encouraging; and yet this fine perennial can be most effectively grown in this way, as witness some capital examples occasionally shown by Mr. R. Parker, Tooting, and Mr. T. S. Ware, Tottenham. For its successful management indeed some care is required.

The *Delphiniums* form a very handsome group of plants, all of which are quite hardy, and of an exceedingly free habit, requiring but little attention in their cultivation, so long as they have room in the open border in which to develop themselves, and good rich soil for their roots. In the case of pot cultivation, a certain amount of restriction is put on the free development the plants make in the open ground; hence the care and attention which are absolutely necessary to success.

The plants intended for pot-culture should either be wintered in small pots, in a cold frame; or planted out on a warm border, in a light free soil, and sheltered during rough weather. As soon as the young growth appears in the early spring, the plants should be at once placed in the blooming pots, say in 8-in. or 9-in. pots, according to the size of the plants. A good loam, with not too much manure, but an abundance of leaf soil, is the compost that should be used. The plants should be potted firmly, and then placed in a cold frame till well established. Early in April the pots should be plunged in coal ashes up to their rims in any convenient airy spot, and on no account must they be suffered to want for water. There should be ample drainage beneath the pots, so as to prevent the soil about the roots from becoming soddened with heavy rains. As the plants throw up their flowering stems, they should be tied to stakes, and as the flowers expand, the plants can be removed to a cool, airy conservatory or greenhouse, but plenty of air is essential to their well-being.

In the autumn, the plants should be turned out of pots, the roots shaken out and divided, and then planted out in a nursery bed, or potted for wintering. The cultivator should select such plants for pot-culture as would be likely to yield five, or six, or more spikes of flowers, according to the variety.

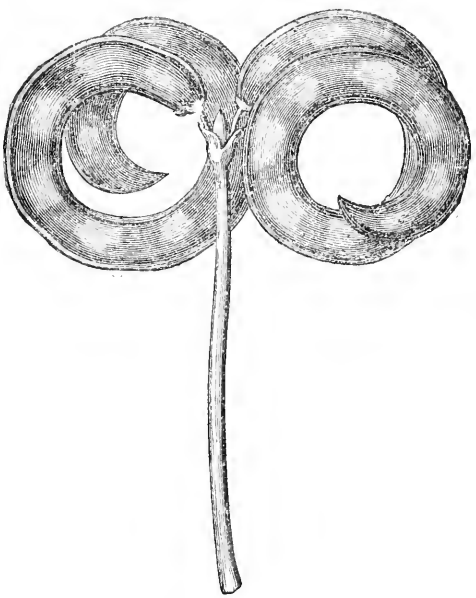
The *Delphiniums* may be divided into two groups suitable for pot-culture—dwarf, compact, free-blooming varieties, represented by *D. Hendersoni* and *D. Belladonna;* and a Ranunculus-flowered set, consisting of double varieties, a good representative of which is *D. alopecuroides.* A tall-growing set, of which *D. elatum* is the type, make splendid border flowers, but are much too tall for growth in pots. The first set has large bold flowers of great beauty; of these the following beautiful varieties should be selected:—*Belladonna, Formosum, Gloire de St. Maude, Hendersoni, Hermann Stenger, Louis Figuier, Madame Henri Jacotot, Madame Chaté, Paul et Virginie, Madame Lelandais, Mons. C. Glym, Nudicaule, Triomphe de Pontoise, Van Siebold,* and *William Pfitzer.* The second section has smaller, but very double, blossoms, produced in symmetrical spikes; of these, *Alopecuroides, Amadée Hans, Delight, Homère, L'Olympe, Marc Auriel, Mons. Lelandais, Noemi, Triomphe de Poissy,* and *Victor Lemoine* should be chosen.—R. Dean.

DOLICHOS BICONTORTUS.

THIS curious plant, which is known in gardens as the Ram's-horn Bean, and which is of Japanese origin, was raised in 1867 by M. Durieu de Maisonneuve, in the Botanic Garden at Bordeaux, from seeds brought over by two Japanese botanists who came to visit the Paris Universal Exhibition. M. Durieu described and figured it under the above name, in 1870, in the catalogue of seeds gathered in the Bordeaux garden. Our figure and the accompanying particulars are derived from the *Revue Horticole.*

The plant is a rapid-growing climber, attaining a height of 6 ft. or 7 ft. The long-stalked leaves have ovate-lanceolate stipules, and consist of large

leaflets, the lateral of which are very unequal-sided, and the odd one nearly triangular, all of them truncate at the base, entire, glabrous, and slightly ciliated. The earlier peduncles are very long, the others shortening in succession as the stem rises, so that they vary in length from 13 in. to 2 in. The flowers are rather numerous, almost sessile, on short, thick, terminal ramifications, comparatively large, with a mixed colouring of violet, yellow, and white. The pods are from two to four in number, rarely more, and are rolled in a circle on the dorsal suture, describing a turn and a half, and so arranged as to resemble a pair of spectacles.



DOLICHOS BICONTORTUS.

M. Durieu further remarks that he has received no particulars concerning this plant, though it is probably grown as a vegetable in Japan. In quality the seeds are equal to our best varieties of Beans, and much superior to those of *Dolichos Lablab*, which is abundantly cultivated in the tropical regions of both hemispheres.

To this M. Carrière adds that the plant requires a strong and long-sustained heat to ripen its fruits. In fact, even when raised in-doors and planted out in a south exposure, very few fruits were found to have ripened by the end of October, when frost came. Hence, in this country, it can only be regarded as a curiosity, but so far as the appearance of its pods is considered, our figure shows it to be a very remarkable plant. If, however, it is really grown in Japan, as is stated to be the case, it may possibly succeed in our climate, though it will probably be cultivated only as an object of curiosity.—T. MOORE.

REGULATE YOUR FRUIT CROPS.

CANNOT the facts which are known regarding the biennial or triennial cropping of many varieties of fruit trees be turned to useful account, in view of securing a more equally-balanced crop annually upon all trees alike, in preference to heavy occasional crops? It is a very common saying, "This tree fruits abundantly every other year," or perhaps every third year. Where pyramidal trees are grown, why not have two or three of a sort, and give them a fillip in this direction, by taking care that each has a good start towards fruiting at a given season, by removing all flower-buds ere they open in those seasons when the tree is not to produce fruit? Once the habit is established, it will work naturally, with but an occasional exception. When the exception is likely to occur will be apparent from the unusual exhibition of bloom buds in seasons when any particular tree is not designed to fruit. By removing these, matters will be quickly righted.

There is yet another idea that strikes one in connection with my theory. By a guarantee that each tree shall only fruit every second or every third season, you may, aided by a judicious summer pinching-back and winter pruning, assure to each such an amount of latent vigour as will not only aid it in carrying a very heavy crop of fruit, but make it certain that they shall be fine as regards size, besides, perhaps, containing a larger share than ordinary of those qualities which are most characteristic of given kinds, yet that they shall not exhaust the tree so much as if the tree had been allowed to run the ordinary course. Moreover, even were such a crop permitted as would be likely to exhaust the tree greatly, its constitutional vigour might be maintained by direct and immediate cultural skill, as opposed to the biennial forced unfruitfulness of uncared-for natural exhaustion. The subject has, moreover, a utilitarian interest. We seldom care to have such a mass of fruit all at once as we get now in certain seasons; it is not appreciated, nor used with the care it might be, were it less abundantly, yet constantly produced, and of better size or flavour.—WILLIAM EARLEY, *Valentines.*

NOTABLE NEW PLANTS AND FLOWERS.

[F.C.C. = First-class Certificate; S.C.C. = Second-class Certificate; B.C. = Botanical Certificate; F.C. = Floricultural Certificate.]

ALNUS INCANA LACINIATA [F.C.C.].—A very handsome dark-green cut-leaved Alder, with the leaves smaller, neater, and more regularly pinnatifid than in *A. glutinosa laciniata.*—*Messrs. Lee: R.H.S., Aug.* 6.

ASTER TANACETIFOLIUS [F.C.C.].—A pretty free-blossoming plant from the Rocky Mountains, with a branching habit, and bright bluish-mauve flowers. Also known as *Machæranthera tanacetifolia.*—*Messrs. Veitch & Sons: R.H.S., Aug.* 20.

AZARA MICROPHYLLA [F.C.C.].—A small-leaved shrub of neat habit from Chili. Said to be hardy, and having a flattened or spread-out form of growth that will make it suitable for walls.—*Messrs. Veitch & Sons: R.H.S., July* 16.

BEGONIA PRINCE OF WALES [F.C.C.].—One of the free-blooming new hybrids of the boliviensis breed, having very bright orange-scarlet flowers of fine form.—*Messrs. E. G. Henderson & Son: R.H.S., Aug.* 20.

BEGONIA PRINCE OF TECK [F.C.C.].—A double form of hybrid Begonia, the flowers of a pale cerise. It is singular that the male blossoms are doubled, while the females remain single.—*Messrs. E. G. Henderson & Son: R.H.S., Aug.* 16.

BEGONIA WILLIAM SPINKS [F.C.C.].—A hybrid variety raised between *B. Pearcei* and *B. Chelsoni*, having pale canary flowers, the reverse of the petals pink; free-blooming, and vigorous in habit.—*Royal Hort. Soc.: R.H.S., Aug.* 6.

CARNATION (CLOVE) KING OF YELLOWS [F.C.C.].—A large flower of great substance, of a pale yellow colour.—*Mr. C. Turner: R.H.S., Aug.* 6.

CLARKIA (PULCHELLA) INTEGRIPETALA LIMBATA [F.C.C.].—A charming rose-coloured variety, the petals entire, and evenly and deeply bordered with white.—*Messrs. Carter & Co.: R.H.S., July* 16.

CLEMATIS GUIDING STAR [F.C.C.].—In this variety the flowers are reddish-purple, with a broad flame of rich maroon; it is in the way of, but superior to *C. magnifica*, and comes also very near to *C. Star of India.*—*Messrs. Cripps & Son: R.H.S., July* 16.

CLEMATIS LOUIS VAN HOUTTE [F.C.C.].—A magnificent dark variety of the *lanuginosa* section, the flowers being large, stout, and very striking, of a blue-purple colour.—*Messrs. Cripps & Son: R.H.S., July* 16.

COLEUS MRS. KNATCHBULL-HUGESSEN [F.C.C.].—A striking golden-leaved variety, marbled and veined with dark, and blotched with the same at the base of the leaves.—*Mr. Kimpton: R.H.S., July* 16.

CYPRIPEDIUM SEDENI [F.C.C.].—A hybrid between *C. Schlimmi* and *C. longifolium*, having flowers charmingly tinted with pinkish red, the petals 2 in. long, pale red-edged; distinct.—*Messrs. Veitch & Sons: R.H.S., Aug.* 6.

DIPLADENIA BRIARLEYANA [F.C.C.].—A seedling from *D. amabilis*, but with very large stout flowers of a red-carmine hue, shaded with a darker tint; vigorous foliage, and very free.—*Mr. W. Bull: R.H.S., July* 16.

GLADIOLUS CAPTAIN STUCKEY [F.C.C.].—Salmony carmine, flaked with dark purple, and purple flame on the throat; extra fine.—*Messrs. Kelway & Son: R.H.S., Aug.* 20.

GLADIOLUS HESPERIA [F.C.C.].—Glowing orange-red, the pale throat pencilled with amaranth; very fine indeed.—*Messrs. Kelway & Son: R.H.S., Aug.* 20.

GLADIOLUS MARY KINNEAR [F.C.C.].—Porcelain white delicately tinged with pink towards the edges, purple flame on the throat, very fine spike.—*Mr. J. Douglas: R.H.S., Aug.* 20.

GLADIOLUS NEOGENES [F.C.C.].—Pale pink, deepening to rosy purple, blotched and spotted with crimson-purple, very fine.—*Messrs. Kelway & Son: R.H.S., Aug.* 16.

GLADIOLUS SCOPAZ [F.C.C.].—Pure white, pencilled with delicate rose on the edges, the throat flamed rosy purple.—*Messrs. Kelway & Son: R.H.S., Aug.* 16.

GLADIOLUS PURPUREO-AURATUS [F.C.C.].—An extremely interesting species; the somewhat bell-shaped flowers, canary tinted with green, the lower segments having black bands on a reddish-brown ground.—*Mr. Wm. Bull: R.H.S., Aug.* 20.

GLOXINIA GRAND MONARCH [F.C.C.].—Shaded purple throat, the lobes edged with white; a fine, bold, erect-flowered variety.—*Mr. J. Gee: R.H.S., July* 16.

Hollyhock Catherine [F.C.C.].—Deep flesh, an exceedingly beautiful soft hue of colour; very fine quality.—*Rev. Lord Hawke: R.H.S., Aug.* 6.

Hollyhock Fire King [F.C.C.].—Bright pale red, a fine hue of colour; good flower and telling spike.—*Mr. W. Chater: R.H.S., Aug.* 16.

Hollyhock Lilac Queen [F.C.C.].—Bright rosy lilac, with a pleasing silvery surface to the flower; fine spike.—*Rev. Lord Hawke: R.H.S., Aug.* 16.

Hollyhock Mrs. Chater [F.C.C.].—Pale salmon, very bright and pretty; fine flower and spike.—*Mr. W. Chater: R.H.S., Aug.* 16.

Hollyhock Octavia [F.C.C.].—Pale pink deeper, in the centre; extra fine, full, and of a beautiful glow of colour.—*Rev. Lord Hawke: R.H.S., Aug.* 6.

Hollyhock Red-Cross Knight [F.C.C.].—Shining maroon-crimson; flowers large and of full substance, but somewhat rough on the edges.—*Rev. Lord Hawke: R.H.S., Aug.* 6.

Hollyhock Vanguard [F.C.C.].—Shining reddish maroon; a very fine flower, and noble spike.—*Rev. Lord Hawke: R.H.S., Aug.* 16.

Hollyhock William Chater [F.C.C.].—Bright yellowish buff, shaded with salmon in the centre; a finely shaped flower of high-class quality.—*Rev. Lord Hawke: R.H.S., Aug.* 6.

Lilium Krameri [F.C.C.].—A grand Japanese species; it has handsome, delicate pink trumpet-shaped flowers, which are very fragrant.—*Mr. G. F. Wilson: R.H.S., July* 16.

Lilium philippinense [F.C.C.].—A charming new white lily, said to come from the Philippine Islands, having long, pure white, trumpet-shaped flowers, produced on slender stems, from 12 in. to 15 in. in height; and fragrant.—*Messrs. Veitch & Sons: R.H.S., Aug.* 6.

Lobelia Charity [F.C.C.].—A charming bright lilac-purple variety of the *L. Erinus speciosa* section, the flowers having a white centre.—*Messrs. Carter & Co.: R.H.S., July* 16.

Olearia Haastii [F.C.C.].—A handsome flowering, hardy shrub, bearing numbers of bunches of white composite, daisy-like flowers.—*Messrs. Veitch & Sons: R.H.S., Aug.* 6.

Pelargonium (double) Madame Rendatler [commended].—Bright rosy violet, a charming hue of colour, but the flowers rather thin.—*Messrs. E. G. Henderson & Son: R.H.S., Aug.* 6.

Pelargonium (double) Mrs. Carr [F.C.C.].—A very novel and distinct variety, with variegated foliage, the yellow leaves having a deep-green centre, the flowers soft pink, full double.—*Messrs. Bell & Thorpe: R.H.S., July* 16.

Pelargonium (hybrid nosegay) A. F. Barron [F.C.C.].—A splendid variety, colour, brilliant orange-scarlet, very fine pip and noble truss.—*Mr. J. George: R.H.S., July* 16.

Pelargonium (hybrid nosegay) Edward Bennett [F.C.C.].—Deep scarlet, a fine glow of colour, and having a marked white eye, extra fine.—*Mr. J. George: R.H.S., July* 16.

Pelargonium (hybrid nosegay) Lustrous [F.C.C.].—Very bright fiery red, very striking and showy, very large bold truss.—*Mr. J. George: R.H.S., July* 16.

Pelargonium (hybrid nosegay) Mrs. J. George [F.C.C.].—Salmon-scarlet, flushed with orange, very free pip, and noble truss.—*Mr. J. George: R.H.S., July* 16.

PELARGONIUM (NOSEGAY) PRINCESS [F.C.C.].—Deep lilac-pink; good bold trusses, and free-branching habit.—*Mr. W. Paul: R.H.S., July* 16.

PELARGONIUM (ZONAL) CZARINA [F.C.C.].—Pure white, with large carmine stains round the eye; pip large, stout, and of fine form.—*Messrs. Bell & Thorpe: R.H.S., July* 16.

PELARGONIUM (ZONAL) REMUS [F.C.C.].—White, with a pale carmine ring round the eye; good pip, and fine rounded trusses borne on erect foot-stalks.—*Mr. W. Paul: R.H.S., July* 16.

PHLOX MISS ROBERTSON [F.C.C.].—A pure white variety of the *Suffruticosa* section; flowers of good form, and fine truss.—*Mr. James Cocker: R.H.S., July* 16.

PICOTEE MRS. LORD [F.C.C.].—A heavy pale-rose-edged variety, of a soft hue of colour; good petal and stout substance.—*Mr. Lord: R.H.S., Aug.* 16.

PRUNUS PADUS VARIEGATA [F.C.C.].—A useful variegated form, the green leaves being splashed and streaked with white.—*Messrs. J. & C. Lee: R.H.S., Aug.* 6.

ROBINIA PSEUD-ACACIA AUREA [F.C.C.].—A golden-leaved type, handsomely tinted, and of bold growth.—*Messrs. J. & C. Lee: R.H.S., Aug.* 6.

ROSE (H.P.) BEAUTY OF THAME [F.C.C.].—Deep crimson, bright in the centre, and heavily shaded on the edges; very large, fine and full.—*Mr. J. Walker: R.H.S., July* 16.

ROSE (H.P.) EMPRESS OF INDIA [F.C.C.].—Deep shaded red-crimson, the colour very bright on the young petals; fine form and substance.—*Mr. T. Laxton: R.H.S., July* 16.

ROSE (H.P.) REYNOLDS HOLE [F.C.C.].—Dull deep crimson, shaded with maroon; a finely shaped flower of good substance, but often shown rough.—*Messrs. Paul & Son: R.H.S., July* 16.

SCOLOPENDRIUM VULGARE VAR. WILLIAMSII [F.C.C.].—One of the multifid forms of Harts-tongue in which there is manifested a strong tendency to throw out broad lateral divisions below the terminal tuft.—*Mr. H. Williams: R.H.S., July* 16.

STATICE ARRARATII [F.C.C.].—A hardy dwarf-growing perennial, bearing numerous spikes of clear pink flowers.—*Mr. T. S. Ware: R.H.S., July* 16.

VERBENA HER MAJESTY [F.C.C.].—Salmon-pink, with a shaded red ring round a showy pale lemon eye; very fine pip and truss.—*Mr. H. Eckford: R.H.S., Aug.* 26.

VERBENA PARADISE WILLIAMS [F.C.C.].—Deep cerise, with a shaded red ring round a bold lemon eye.—*Mr. H. Eckford: R.H.S., Aug.* 20.

GARDEN GOSSIP.

THE returns of the condition of the *Fruit Crops*, published a few days since in the *Gardeners' Chronicle*, show that *Apples* are generally a thin crop, especially in Scotland, the crop appearing to be better in England. Cider Apples are abundant, much to the satisfaction of cider-makers. *Pears* are generally thin, much under the average, and generally small and late. *Apricots* have been a light crop generally, but the fruit fine and of superior flavour. *Plums* are very scarce, with the exception of that fine kitchen variety, Victoria, which appears to be bearing well generally. Damsons are very scarce. *Strawberries*, in nearly every case, are reported to have been very abundant and fine in size and flavour. *Peaches* and *Nectarines* are considerably under the average, the latter having yielded the best crops of the two. *Figs* are a poor

crop generally, with the exception of some parts of Kent and the neighbouring counties. *Small fruits* have been most abundant, and of excellent quality; but *Nuts* of all kinds have yielded only a partial crop. The trees are generally clean and healthy, and promise well for another year.

—— What kind of *Helichrysum* furnishes the *New White Immortelles* of our bouquetists, and which have found their way into the leading flower shops of the metropolis during the last season? They are, in every way, a very great advance upon anything of the sort seen in this country before; being large in size, and with a centre well filled up, and of the purest "satiny" white conceivable; indeed, for purposes of which dry flowers of the kind are generally put to, nothing can be more beautiful and useful. Information on this point cannot fail to prove acceptable to all.

—— So fine a specimen of *Cypripedium spectabile* as that referred to in the following extract from a private letter of the late Mr. W. Barnes deserves to be recorded. He wrote:—"*Cypripedium spectabile* is amongst the first of some fine old plants now nearly forgotten. I originally had one plant of it, which I sold to Mr. Rucker for 12 guineas—such a plant as I doubt had ever before been seen. This plant had thirty-two stems, from 2 ft. 6 in to 3 ft. in height, and there were between thirty or forty blossoms upon it. It was certainly magnificent, but it took me 19 years to grow it. This, however, I did not mind, as the pleasure of seeing so beautiful a specimen grow up amply rewarded me for the trouble. There is no great difficulty in managing it; it only requires certain little attentions at certain times."

—— In the foremost rank as an autumn decorative plant must be placed *Anemone japonica* and its varieties. This interesting species, as well as its beautiful white variety, in particular, become really grand in the early part of October, established clumps bearing many branching spikes, 3½ to 4 ft. in height, literally crowned with flowers. Notwithstanding the almost unparalleled beauty (as a hardy herbaceous plant) of the chaste alabaster-white of Anemone japonica alba, it is rarely one finds it in a garden, notwithstanding so much has been written in praise of it during the past ten years. The wonder is, that these Anemones are not much more grown to assist in furnishing a supply of cut flowers at that season of the year.

—— The great feature in the garden at *Longleat*, as we learn from the *Journal of Horticulture*, is the *Large Vinery* which has been recently erected. It is 216 ft. long by 30 ft. wide, span-roofed with a lantern ridge, and 18 ft. from the floor to the ridge. It is a fine structure, and with the exception of the large conservatory at Chiswick, is probably the finest vinery in the United Kingdom. The Vines are all planted inside, and are growing with great luxuriance; but they are yet young, and have not produced fruit. This house, the design of the gardener, Mr. Taylor, and built under his direction, is in accordance with his ideas of the requirements of good Vine-growing.

—— What are called *Medicated Garden Shreds* are prepared from a strong patent webbing, covered with a composition which renders it medicated, so that it will repel insects, although perfectly harmless to vegetation. Those who prefer, as some do, the old-fashioned plan of training by means of nails and shreds, will be glad to hear of these useful articles, which are prepared of proper length for use. The decay of woollen materials consequent on the moisture retained in their substance, is an evil which is obviated by the use of the waterproof new shred. They are prepared by Mr. Lerro, of Walworth.

—— A correspondent of the *Gardeners' Chronicle* who regards *Double Chinese Primroses* as much preferable to the single ones for ornamental purposes, finds it best to raise them annually from cuttings, and adopts the following plan:—

As soon as the plants have done flowering they are placed in a temperature of 55° at night, with an advance of 10° by day; in a temperature of 65° to 70° at night, they get drawn. Any weak, sickly, or insufficiently grown plants should be repotted, removing as much old soil as possible without injuring the roots; others will be benefited by a top-dressing. In

about six weeks from the time they are placed in the above temperature, the cuttings will be ready, though some may not be much larger than when placed there, but they will be sufficiently excited. The whole plant should then be cut up, and every shoot that has half an inch of old brown wood attached to it, put in as a cutting. The cuttings are to be inserted singly in thumb-pots, in a mixture of peat with one-sixth of loam, and a very liberal portion of sand. Each cutting requires a stake and a tie to support it. I have tried, he adds, to keep old plants, but they have made only miserable objects compared with the yearly ones.

GARDEN WORK FOR SEPTEMBER.

FLOWERS

CHOICE specimen plants in the Stoves should now be ripening their growth, and climbers on the roof must be cut in gradually, to give more light to the plants. *Stephanotis*, *Clerodendron*, *Bougainvillæa*, *Quisqualis*, *Allamanda*, &c., may be cut in sprays and branches as required for room or table decoration; plants of these in pots may be placed in the lightest parts of the house to ripen off thoroughly. *Marantas* will now be in full beauty; gradually get the old leaves to rest, and by withholding water and heat arrest the formation of new ones. Ripen off the first and best plants of *Caladiums* for store pots; these must be kept in a temperature of 60° to 70° in a dormant state or they will die, even if well and gradually ripened; whereas if the cold hits them in a green state, there is no keeping them at all through the winter. *Achimenes* and *Gloxinias* should also be sent to rest by withholding water. Even Ferns, Palms, and other fine-foliage plants are best prepared for wintering, by a gradual ripening of summer leaves, and an arrest of growth.

These summer beauties must be succeeded by winter-blooming plants, such as *Euphorbia*, *Rivina*, *Justicia*, *Gesnera*, *Thyrsacanthus*, *Centradenia*, *Pentas*, *Cyrtanthera*, &c. These should receive a final potting, and be pushed on in warm pits to make the stove gay in winter.

The Conservatory will now be gay with *Fuchsias*, *Zonal Pelargoniums*, *Celosias*, *Balsams*, &c. It cannot be kept too cool, unless *Marantas*, *Caladiums*, *Achimenes*, *Gloxinias*, and stove palms and ferns are used to furnish it. In that case, a temperature of 55° to 60° should be maintained night and day, with a rise of 10° or 15° with sun-heat. Water stove plants in the conservatory sparingly. Attend to *Lapagerias*, *Tacsonias*, *Passion-flowers*, &c., on the roof and back walls. A free drooping habit is generally most effective for climbers; they often look charming, reaching down and mingling with the plants in the beds or borders. Many *Heaths* and other choice greenhouse plants, *Azaleas*, *Camellias*, &c., will still be out of doors. Towards the end of the month, it is safest to place them under shelter. The transition from outside to inside is often trying to plants; and hence the inside should for a time be made as like the outside as possible, even to the dewing over of the leaves, and the leaving of every door and window open for a time. Thus the plants will slide, as it were, imperceptibly from the free air to a house enclosed on all sides. *Pelargoniums* should be shifted into larger pots before the roots get entangled too much. The earliest plants may now be placed in their flowering pots. The secret of the safe wintering of fancy and other Pelargoniums is a good grip of the pots by the roots before winter. A batch of late Zonal Pelargoniums and Fuchsias brought in from out of doors now will flower on almost to Christmas. Shift on *Chinese Primroses*, single and double, and *Cinerarias*, giving the earliest their final shift now. For early work, 4-in. or 6-in. pots are the best. *Salvia splendens* and others should now have a final shift. Attend to the training, watering, and thinning of *Chrysanthemums;* also to the potting of *Hyacinths* and other bulbs for early forcing, not forgetting the Roman Hyacinth, the earliest

and perhaps the most useful of them all. Pot in light sandy loam, and plunge overhead in cinder ashes or cocoa-fibre refuse.

Without spot or flaw should be the condition of the flower-garden throughout the month. The golden and silver tricolor *Pelargoniums* show the full beauty of their leaves this month or next; earlier in the season the sun is too strong for many of them, but during the long quiet nights of autumn the colours have time to develop their many-tinted beauties. The Zonals, too, are perfect in leaf and truss, the autumn dews being seldom heavy enough in September to burden the flowers to their utter destruction. No weeds must be seen; and grass and gravel must be perfect.

But while I write, thousands of gardens are being utterly ruined, and bed after bed stripped of its beauty, cut to pieces for cuttings. Of all the waste of force and of beauty, this wrecking of the flower garden early in the autumn, for cuttings, is the most reckless. We labour hard eight months for four months' floral display, and then mar two months out of the four by our sheer folly. There are two simple ways of stopping the wreckers among the flowers. The first and best is to plant out a proper number of plants for stock in a reserve garden or border. The other is to take off the cuttings with care and judgment: by collecting side-shoots and cutting back to a flower-bud, sufficient cuttings may often be collected without injuring the flower-beds. Either way, propagation must now proceed vigorously, as early rooting is one of the surest receipts for safe wintering, with the notable exception, however, of *Calceolarias*, which cannot be rooted too late, if the disease is to be mastered, and they are to pass through the summer creditably. For *Verbenas*, *Ageratums*, *Petunias*, &c., next month is time enough. But all kinds of *Pelargoniums* should be rooted in the open air as soon as possible. *Hardy Annuals* may also be sown, and seedling *Hollyhocks*, *Pansies*, *Wallflowers*, &c., planted out. *Arabis*, *Aubrietias*, *Daisies*, *Forget-me-not*, and other spring-flowering plants, must be kept clean and thin, to ripen before the end of the season. Thin the flower-beds of *Dahlias*; tie, train, and water with manure; and shade show flowers with caps of pasteboard, to preserve the purity of the colours.—D. T. Fish.

FRUITS.

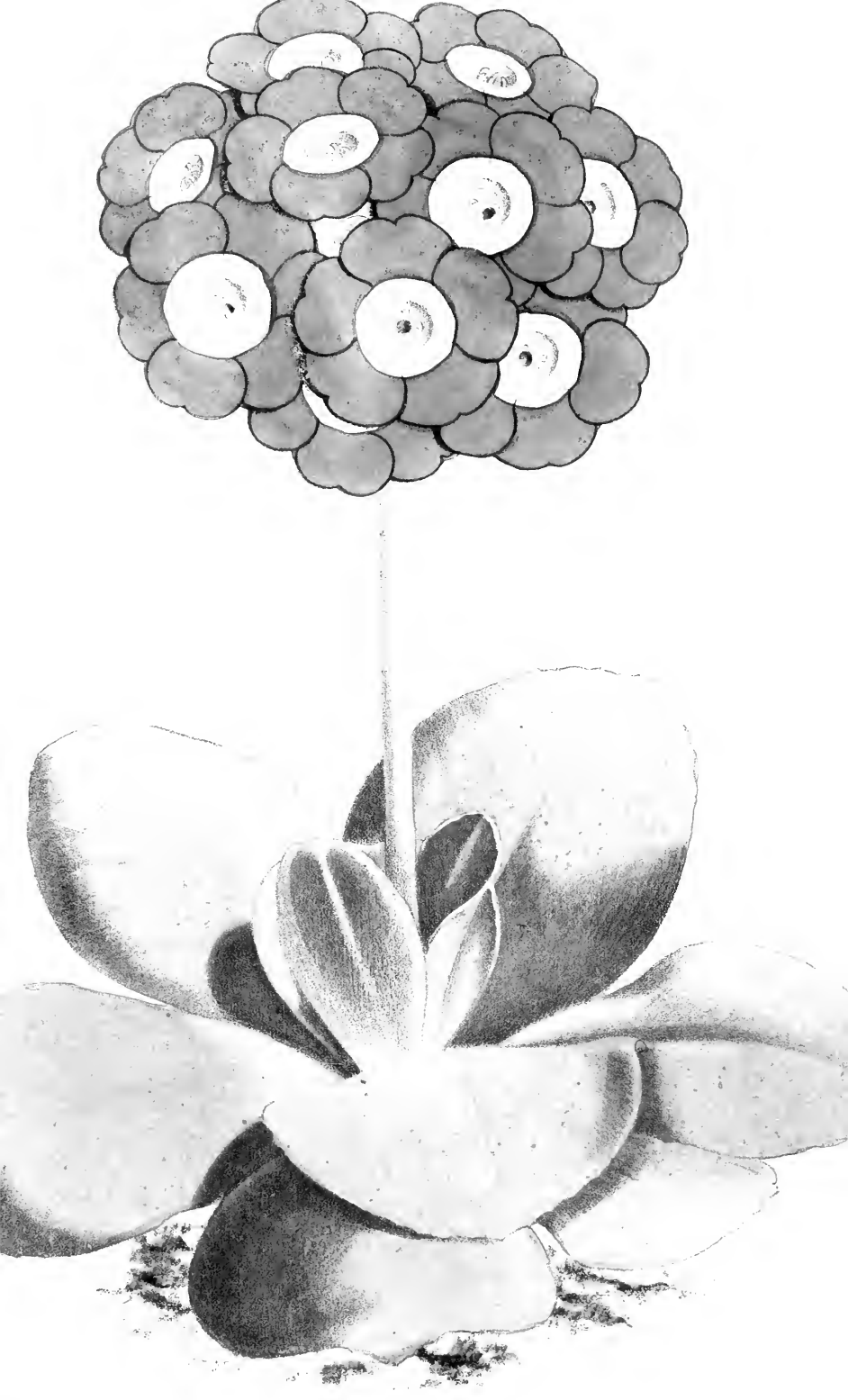
In-Doors.—*Pine-apples:* Should cold weather set in, fire-heat will be necessary to assist the ripening fruit. As soon as all the summer fruit are cut, the houses and pits should be rearranged; the autumn and winter-fruiting plants, the plants for spring fruiting, and the succession plants, each in a compartment by themselves. Should the materials for bottom-heat require partial or entire renewal, this is a good time to do it; shift any plants that may require it, and be careful in plunging the larger pots not to make the bark too firm around the pots, as in case of over-heating the plants would suffer. Watch carefully for some time, and do not let the bottom-heat exceed 90°. The autumn fruit will now require liberal supplies of water, a tolerably moist atmosphere, and a temperature by night of at least 70°, and by day of 80° to 85°, with an increase of 10° or 15° by sun-heat. Give air freely in the forenoon when the weather will permit, but be careful to close up soon in the afternoon. The succession plants will now be making rapid and vigorous growth, and should have an abundance of air, especially in the forenoons, and liberal supplies of water. The night temperature should not get much below 65°. *Vines:* The early forced houses ought now to be at rest, and should have all the air possible left on both night and day. Pay attention to the ripening of the wood in succession houses. Keep ripe Grapes cool and dry. In houses where Grapes are ripening give plenty of air, and in wet weather fire-heat will be necessary, not only to ripen the grapes, but also to mature the wood and buds.

Peaches and Nectarines: The early houses should now be in a state of perfect rest; take off the lights, that the trees may have full exposure to the weather. Pay every necessary attention to the ripening of the wood in the late houses. Keep inside borders well watered, otherwise the buds will not fill up properly. *Figs:* Water must now be given sparingly to trees in borders, but trees in pots and tubs must never be allowed to get too dry; when the fruit is all gathered, syringe the trees well and give abundance of air both day and night. *Melons:* Maintain a good heat, but guard against too moist an atmosphere, or the flavour will be poor; water carefully when required, and give some air at every favourable opportunity.

Out-Doors.—Go over *Peach* and *Nectarine* trees and stop or nail in any shoots that may require it, and remove any leaves that shade the fruit; attend to gathering the fruit as it ripens. Look over *Apricots*, *Pears*, *Cherries*, *Apples*, and *Plums*, and pinch off all superfluous shoots; gather as the fruit arrives at maturity. The greatest care and attention is required in gathering fruit for keeping. Go daily over the trees, and gather only as they ripen. All fruit should be laid singly on shelves in the fruit-room, which should be cool and dry. Spare no pains to protect ripe fruit from birds and insects. Continue to make new plantations of *Strawberries*. If not already done, all the runners on the bearing plants intended to remain another year should be cut off and cleared away, and the soil between the plants should be forked over. Preparations for the planting of fruit-trees next month may now be commenced.—M. Saul, *Stourton, Yorkshire.*

VEGETABLES.

During this month *Onion* crops should be harvested. It is not advisable to let them become over-ripe before they are taken from the ground, as the better they are ripened off, the worse they keep, as a rule—which is a fact that should not be lost sight of. Doubtless the best way of preserving the crop is to rope the best, when they may be hung in a cool, airless place, and all decaying ones may be readily removed, ere they can cause injury to those that are sound and good. *Tomatos* will now require constant attention, with the view of inducing the fruit to ripen off freely; all leaves which unduly shade them must be removed, and the points of all growing shoots pinched back. Should a dry period intervene, it will be absolutely necessary to well deluge the roots of all such crops as autumn *Cauliflowers*, *Peas*, *Beans*, &c., as without a sufficiency of root moisture they cannot produce the necessary crop of crisp vegetables fit for table. As it is at all times judicious to make two sowings of all kinds of seed intended for main crops and which have to withstand our variable winters, it will be wise to make at least two sowings of *Cauliflowers* for the spring crop. According to the state of the former sowing at this time, so should the successional sowing be timed to succeed it. Make successional sowings of *Lettuces* of the *Brown Cos* and *Hardy Winter Cabbage* kinds; sow also a good breadth of *Endive*, as it will come in well for the early winter supply. Continue successionally to transplant all such as are sufficiently large so to treat, during every showery period that occurs, as there will be no danger of their "running" to seed after this date. *Radishes* should also be sown for more permanent crops,—to afford longer supplies than previously. Hoe and otherwise stir the soil well amongst all growing crops, and especially young seedling crops, such as *Spinach*, &c. Prepare some necessary kind of protection to place over the late out-door crop of *Dwarf French Beans*, should symptoms of early frosts exhibit themselves; as not infrequently it so happens that an assured protection against a single early frost will leave the supply uninjured, to afford many subsequent pickings.—William Earley, *Valentines.*



Charles Perry Auricula

AURICULA CHARLES J. PERRY.

WITH AN ILLUSTRATION.

THIS splendid Self Auricula was raised by Mr. Turner, of Slough, and was very deservedly awarded a First-class Certificate by the Floral Committee of the Royal Horticultural Society, at its meeting on May 7, 1873. In the class of Selfs, it claims a very high position, possessing as it does so many of the good properties essential to constitute a first-class flower. It is a healthy free grower, has fine handsome white-dusted foliage, and produces stout large trusses of its lovely flowers. The colour is a beautiful deep violet, the pips being large and flat, remarkably smooth on the edge, and very circular, while the colours are well proportioned, with a good white paste. It is a flower of firm substance, and is not only very distinct, but particularly attractive, and in every way well worthy a place in the most select collections of these most interesting spring flowers.—M.

ROSES AND ROSE-CULTURE.

Chapter XVIII.—On New Roses.

IN the last chapter I endeavoured to place fairly before the public the grounds on which they ought to value and cultivate Old Roses. Let me now say what can be fairly said in favour of New Roses. It has, I think, been the fashion of late unfairly to depreciate the latter; and because not more than a tithe of the novelties yearly introduced are worthy of introduction, it has become the custom with some to include the whole in one sweeping condemnation. Now this is neither just nor wise. As well might we condemn all men because there are bad men. I am free to admit that numbers of worthless roses are annually palmed on the public; the practice, after making reasonable allowance for errors of judgment, to which all men are liable, is worthy of censure; but while there are buyers, there will be sellers, and buyers should be more cautious, and only buy of those whose novelties of the past have given a fair proportion of real gems, and by inference, a guarantee of value for money in the future.

If the wealthy and those interested in Rose-culture were to give up the purchase of new Roses, there would be no encouragement for the raising of seedlings, and consequently we should gain no improvement. That improvement is still going on I shall proceed to show. Will my readers go back with me to 1852, a period of twenty years, and see what has been done during that period? Very few of the roses of that date are now considered to stand in the front rank. The year 1853 gave us *General Jacqueminot*, *Jules Margottin*, *La Ville de St. Denis*, and *Gloire de Dijon*. The next four years gave us, among others, *Duchess of Norfolk*, *Gloire de Vitry*, *Lælia*, *Lord Raglan*, *Madame de Cambacérès*, *Madame Knorr*, *Madame Masson*, *Madame Vidot*, *Madame Vigneron*, *Monsieur de Montigny*, *Charles Lawson*, *Madame Edouard Ory*, and *Triomphe de Rennes*. And since that period the majority of our present splendid and most popular

sorts have been introduced. What, comparatively, would our Roses be without such gems as *Abel Grand*, *Alfred Colomb*, *Antoine Ducher*, *Beauty of Waltham*, *Charles Lefebvre*, *Countess of Oxford*, *Devienne Lamy*, *Dr. Andry*, *Duke of Edinburgh*, *Dupuy Jamain*, *Edouard Morren*, *Elie Morel*, *Ferdinand de Lesseps*, *Fisher Holmes*, *Glory of Waltham*, *Horace Vernet*, *La France*, *Lord Macaulay*, *Louis Van Houtte*, *Madame la Baronne de Rothschild*, *Mdlle. Thérèse Levet*, *Marguerite de St. Amande*, *Marie Baumann*, *Marquise de Castellane*, *Marquise de Mortemarte*, *Monsieur Noman*, *Paul Néron*, *Belle Lyonnaise*, *Catherine Mermet*, *Jean Pernet*, *Madame Trifle*, *Madame Levet*, *Madame Margottin*, *Maréchal Niel*, and *Monsieur Furtado?* Well, these, with many others, some as good, and many nearly as good, have been introduced since the period alluded to.

But perhaps my readers will feel more interested in an opinion as to the merits of the novelties introduced within the last three years. In the autumn of 1870 were introduced *Capitaine Lamure*, a good dark rose, and a few Tea-scented Roses of fair average quality. But this was the year of the war between France and Germany, when our neighbours' efforts were absorbed in that great struggle, and the transit of goods was both difficult and uncertain. The next autumn, 1871, gave us, among others, *Abbé Bramerel*, *André Dunand*, *Auguste Rigotard*, *Baron de Bonstetten*, *Baronne Louise Uxkull*, *Coquette du Blanches*, *Etienne Levet*, *François Michelon*, *Lyonnais*, *Madame Bellon*, *Madame de Ridder*, *Madame Georges Schwartz*, *Madame Lefebvre Bernard*, *Madame Scipion Cochet*, *Princess Beatrice*, *Richard Wallace*, *Madame Camille*, *Mdlle. Cecile Berthod*, *Madame Jules Margottin*, *Marie Van Houtte*, *Perfection de Monplaisir;* and these have already taken a place amongst our established favourites.

The autumn of 1872 brought before us a tempting array of novelties, with glowing descriptions, and I doubt not that some of them will realise those descriptions; but how they may behave in this insular climate of ours is as yet problematical, so that what I may say of them must be taken *cum grano salis*. Among the best, I think will be found Perpetual Moss—*Madame Moreau;* Hybrid Perpetual—*Bessie Johnson*, *Claude Levet*, *Firebrand*, *Madame Lacharme*, *Madame Marius Cote*, *Mrs. Veitch*, *Pierre Seletsky*, *Souvenir de John Gould Veitch*, *Souvenir de Romain Desprez;* Noisette—*Madame Caroline Kuster;* Tea-Scented—*Amazone*, *Anna Ollivier*, *Madame Denis*, *Mdlle. Marie Arnaud*, *Marcelin Roda*, *Perle de Lyon*, *Vallée de Chamonix*.

While writing on new Roses, it would seem in order to look fairly in the face what we are gaining and what we are losing on this count. Well, we are gaining in size—witness *Paul Néron*. We are also gaining more globular-shaped Roses. The flat Rose with circular outline was formerly the favourite form with the French; for years I have been endeavouring to induce the raisers there to adopt the globular as the ideal of form, while not neglecting the other, which we term "compact," because such is valuable for the sake of variety; but there now seems a danger of losing the "compact" Rose altogether. One of our wits has, I think, said that it would require a surgical operation to get an idea into some

heads, and it would seem that the heads of the raisers of Roses in France are not large enough to contain two ideas at once. On the other hand, our new Roses are in most cases losing in sweetness, in constitution, in perpetuity of flowering. Few of them will compare on these three points with the old favourites, *Baronne Prevost*, *Beauty of Waltham*, and *Duchess of Sutherland*. The one idea is a large globular rose, *a show rose*, no matter if it has no scent, does not grow, and will not flower in the autumn. Many of our recent Hybrid Perpetual Roses are lamentably deficient in these great qualities, and are, in my judgment, little more than summer Roses. The French raisers should hasten to learn the fact, that the majority of their customers grow Roses for garden and house decoration, rather than for exhibiting, and that such will not be satisfied with anything short of novelties that smell sweet, grow well, and bloom perpetually. They must hasten to accept these facts, and work accordingly, or the English raisers, who are now fairly on their track, will assuredly supplant them. We want a Paul Néron in form and size, of every colour and shade of colour, white, red, and yellow—blue, if we can get it—that shall excel all existing kinds in sweetness, exceed them in hardiness of constitution, and give forth a succession of flowers from June till November.—WILLIAM PAUL, *Paul's Nurseries, Waltham Cross, N.*

ON THE VALUE OF ORCHARD-HOUSE FRUIT.

I HAVE read with much interest a paper from "M. T." (p. 200), on the value of Orchard-house fruit; and as this produce is represented by many as falling short of their expectations, I will give you the result of ten years' experience, in the hope of placing the merits of the Orchard-house fairly before your readers.

With the exception of Pears,* all our fruits can be grown in these structures with certainty, both as to quantity and flavour. But the house must be well constructed as regards light and ventilation; water in abundance must be always at command; air must circulate in every foot of the building; and not a leaf must ever manifest the presence of aphis or red-spider. All this may appear a little formidable, but the syringe and constant supervision of the gardener or amateur for the first few weeks will be certain preventives; and besides the attractive health and beauty of the trees during the summer months, an ample supply of the choicest fruit, three weeks in advance of the open-wall crops, will well repay all the trouble and watching it so imperatively demands.

Firstly, then, as regards the house. It should be a "lean-to," with a back wall 10 ft. to 11 ft. high. The front lights, which should be only two bricks from the ground, should work on pivots, with pins to regulate the opening of the sashes, so that the ventilation effected by them may range between an inch and a perfect course when the sash or light is horizontal. Then at the back (or top of the wall), iron shutters of

* Mr. G. F. Wilson, who adopts pot-culture, grows Pears to great perfection of crop, size, and flavour by the aid of the orchard-house, but they are swelled out-doors during summer.

about 6 in. broad and of any convenient length, and worked by a strong handle, will effect complete ventilation. The roof here is a fixture. A wall of the height just mentioned will, with a good "tip," leave room for a path between two rows of trees. I always grow good crops of large and high-flavoured fruit, and with the exception of the ripening season, when the wasps scent our dainties from afar, I know but few disappointments.

If this commencement is admissible, I purpose going into such general detail as shall place all my knowledge of this new branch of gardening at the command of your readers.—G. D. [Please do.]

TECOMA RADICANS.

FEW of our hardy climbers are better worth growing than the North-American Trumpet-flower, sometimes called *Bignonia radicans*. There are two or three varieties, all of them plants of remarkable beauty when freely grown. They are deciduous, their woody climbing stems clinging to the surface of a wall by means of multitudes of short rootlets, in a manner similar to that which may be observed in the case of the ivy. The accompanying figure

TECOMA RADICANS.

from Mr. Hemsley's *Handbook of Hardy Trees and Shrubs* gives a good idea of the general aspect of the plant, which is of free habit, growing from 20 ft. to 30 ft. high, and covering a considerable space of wall if encouraged to do so. It has pale brownish stems and branches, which are something like those of the vine, but smaller, rough and rooty, with opposite pinnate leaves, which consist of nine ovate acuminate serrated leaflets, and are not furnished with tendrils,—this being one of the peculiarities by which Tecoma is separated from *Bignonia*. The flowers are

produced in terminal corymbose panicles, and are of a fine shaded orange-red colour, the corolla having a longish funnel-shaped tube, and a five-lobed spreading limb. It was brought over from North America, where it occurs from Pennsylvania southwards, so long since as 1640, but is not so generally met with in these days as it deserves to be.

There is a variety called *T. radicans lutea*, in which the flowers are more of a yellow colour: but the finest variety of this type is that called *T. radicans major*, which is in every way a magnificent plant, producing abundantly at the tops of its branches, large, tubular, deep crimson-red blossoms, which are much larger than those of the ordinary form, as well as more profusely developed. This was obtained from Carolina in 1724. In the French gardens there appears to be cultivated another variety which we have not seen, called *T. radicans sanguinea* (or *atropurpurea*), which is described as having smaller purple flowers.

All these fine plants are perfectly hardy and free-growing, requiring no more than ordinary good soil, and a little attention in pruning and training once or twice in a season. We recommend them strongly, especially the variety which bears the name of *T. radicans major*.—T. Moore.

FUCHSIA CORYMBIFLORA.

THIS is one of the most ornamental of tall-flowering shrubs for large conservatories, greenhouses, orangeries, &c. Though formerly well known and highly appreciated, it now seems to be forgotten, which is much to be regretted, since there is, perhaps, no other plant to be compared with it for some of the features which constitute the highest style of beauty. It forms a large erect-branched shrub, with ample leaves of a velvety texture; while at the extremity of each branch grows a large densely-flowered compound raceme, 12 in. to 18 in. in length, of rich crimson tubular flowers, each about three inches long,—each corymb so massive as to weigh down the branch on which it is borne. A well-grown specimen will present from six to twelve or more of such clusters of bloom. It appears difficult to account for so splendid an object being so much neglected, but the causes may, perhaps, be traced to these considerations,—(1), a forgetfulness of the natural size required in order to display its greatest beauty; (2), the want of requisite attention to the proper period and degree of rest from growth; and (3), want of the requisite knowledge to apply a modified lower temperature, to retard and mature the young shoots of summer growth, by pot-culture, to induce bloom for the current year.

It would be well if enthusiastic lovers of plants and flowers would remember that the most magnificent displays of bloom obtained from some of our noblest plants have only been the natural results of a corresponding extent and maturity of growth; and that the same conditions are equally applicable, for obtaining proportionate results from smaller plants. In other words, previous maturity and ripeness of growth, brought about by withholding a due proportion of the ordinary stimulants to vegetation for a given period.

before their natural season of flowering, is essential for obtaining fertility of bloom, especially in smaller plants of excessive vigour. The greater the constitutional tendencies to an excessive flow of sap, manifested by grossness and robustness of habit, the more severe, though gradual, should be the application of means to retard growth, and elaborate the secretions for a period sufficiently extended to induce bloom-buds; and their full development should be secured by an after application of genial temperature.

Again, healthy action or exercise is not more essential to sustain appetite in the human frame than is a season of rest necessary for the maturation of growth in plants, this, again, being essential to their fertility, either in regard to the production of flowers or fruit. It will hence be readily inferred that, while it is important that ornamental plants of large or robust growth should, where a fine display is looked for, be allowed to attain their matured size, yet, by a judiciously regulated management, such as a restriction to given-sized pots, proper modifications of heat, light, water, &c., and the absence of any special stimulus to growth, it is possible in the majority of cases to obtain a relative amount of bloom from smaller plants of species naturally large-growing. It is in the forgetfulness of these important facts in the cultivation of plants, that it has often happened that beautiful species have been so mismanaged as to lead to disappointment, a corresponding amount of bloom being expected from plants only grown to one-half their natural size, and this without any regard to the means requisite for maturing the growth so obtained. Thus too often comparatively large half-grown plants, of vigorous character, have been discarded, for the sole reason that the plants did not produce the desired effect, the reason all the while being that they had been subjected to a course of treatment perfectly inadequate to produce it.

For summer decoration, in large pots, or for planting-out as pillar ornaments, training up large rafters, or as single portable specimens, *F. corymbiflora* is one of the grandest plants known. After the season's growth and bloom, the plants should be gradually exposed, so as to mature and harden their shoots; the supply of water must also be diminished, and the plants eventually removed to a dry, sheltered position, where they may be preserved from the influence of frost until spring. When again about to be started into growth, the balls of soil should be well soaked, and the sap slowly excited before the old soil is reduced, or fresh-surfaced, or they are shifted into larger pots; and, as a general rule applicable to large full-grown plants, one liberal early-spring or summer shift to a larger pot should be considered sufficient for the season's bloom. Young or medium-sized plants from which flowers are required should, after a partial excitement of the growth, receive a rich surface-dressing upon the liberal-sized autumn shift, or otherwise should be restricted to one early-spring shift into a larger pot. The period of maturing the early summer's growth, by diminishing the ordinary stimulus to vegetation, as an inducement to bloom, must be regulated by the vigour of the growth.

As an admonitory hint against over-potting plants of excessive vigour, it may

be remarked, that where such plants have been well potted in the previous autumn, it has often been found that a rich surface-dressing, and occasional applications of manure-water, have proved a more effectual check upon undue exuberance of growth, and more favourable for bloom, than resorting to larger pots for each ensuing season.—W. Wood, *St. John's Wood.*

PICEA PINSAPO ON CHALKY SOILS.

SOME of your readers may not know that this fine tree will do well in a chalky soil, but the health of the trees, from a chalky locality, of which I send the dimensions is all that can be desired, and so dense and closely interwoven are they, that it is impossible to see through the branches. The trees are growing at St. Giles, the seat of the Earl of Shaftesbury. Mr. Hayter, the gardener there, informs me that they have been planted about twenty years. *Pinus insignis* and *Taxodium sempervirens*, the dimensions of which I also send, do well in this soil, but many other conifers planted there at the same time, entirely refuse to grow.—Henry Chilman, *Somerley.*

	Height.	Girth of Stem 1 ft. from Ground.	Diameter of Branches.
	ft.	ft. in.	ft. in.
Picea Pinsapo, No. 1	28	3 9	18 0
— — No. 2	31	4 10	21 6
— — No. 3	26	3 7	19 0
— — No. 4	23	3 9	16 7
Taxodium sempervirens	39	3 0	19 0
Pinus insignis, No. 1	30	3 8	24 0
— — No. 2	36	3 6	23 0

PANCRATIUMS.

THESE charming bulbous plants are tolerably well known, and are invaluable for decorative purposes, and therefore highly deserving of cultivation. Many of the species have large handsome flowers, which are deliciously fragrant, and continue perfect some considerable time after they are open. Most of the species are natives of hot climates and require a stove temperature. They should be grown in a compost made up of three parts light turfy loam, and one part peat or leaf-soil, with a little sand intermixed. They are increased by offsets from the roots, and also by seeds.—M. Saul, *Stourton.*

THE COLCHICUMS OR MEADOW-SAFFRONS.

FEW of our hardy bulbs are more showy and effective than the varieties of Autumn Crocus, or Meadow-Saffron, called *Colchicum*, in the language of botanists, They spring up, as if by magic, towards the end of September, or in October, when flowers are beginning to get scarce, and if planted in masses or lines near the margin of a bed or border, prove as effective there as the ordinary Crocuses and Snowdrops do in the sweet spring-time. A good many varieties are now in cultivation. We take the following from Mr. Barr's *Catalogue* for the present season :—

"It would hardly be possible for those who have not seen, in bloom, the

leading varieties of *Colchicum*, to conceive how decorative they are in the flower-garden, and how valuable for prolonging the succession of flowers. In September and October, and even in November, the display produced by the *Colchicum* at our experimental grounds is a source of attraction to many friends. We have every species and variety which we have been able to procure, so that we have the earliest and the latest, the smallest and the largest, the single and the double, ranging from the purest white to the intensest purple. Some of the varieties have beautifully chequered flowers, and most of them are so floriferous as to cover the ground with a sheet of blossom, and as the leaves do not appear till spring, the effect at a little distance is peculiar, there being nothing but colour.

"The natural position for the Colchicum in the economy of the flower garden is the mixed flower and shrubbery border, and the woodland walks, but its accommodating habits readily admit of its utilisation in flower beds to prolong the decorative season. In beds of dwarf plants, or where Geraniums are not crowded together, the roots of the *Colchicum*, lifted when at rest, should be planted, making holes all over the flower bed with a common dibber, and in each hole planting a *Colchicum*, and covering it with soil. These roots throw up their large masses of Crocus-like blossoms just as the summer flowers are dying off, and yield a most pleasing and distinct effect to the summer decoration. *C. byzantinum*, with its rose-coloured flowers, *C. variegatum*, with its chequered blossoms, *C. autumnale*, with its rose-purple flowers, and the purple, the variegated, and the pure white doubles, each with its distinctive character, might be intermingled or arranged separately in distinct beds."

C. autumnale; rose-purple.
— *plenum*; lilac, very double.
— *plenum striatum*; lilac, striped with white, very double.
— *album*; pure white.
— *album plenum*; pure white, very double.
— *pallidum*; pale rose.
— *roseum*; rose-lilac.
— *roseum striatum*; rose-lilac, striped with white.
C. byzantinum; beautiful rose, very abundant.
— *variegatum*; leaves variegated.
C. chionense; rose-lilac, beautifully chequered, segments reflexed.
C. crociflorum; intense purple-crimson, shading off in age into white stripes.
C. montanum; rich rose-lilac.
C. speciosum; beautiful rose, like *C. byzantinum*, but twice the size.
C. variegatum; rose-purple and white, chequered like a chess-board; also called *C. tessellatum* and *C. Agrippinæ*.
— *pallidum*; rose, chequered white.

DRACÆNA IMPERIALIS.

THIS is the finest variety which has yet been introduced to public notice amongst those which have the leaves variegated with white and red, the leaves being not only bolder, but better marked. Mr. Bull, to whom our thanks are due for the use of the accompanying cut, describes it as follows:—"A South Sea Island *Dracæna*, and one of the most beautiful which has yet found its way into our plant stoves. The variegation is in this case of a clear white combined with deep rose, and is most effective. The leaf-stalks are marginate; the blade narrowly elliptic-oblong, tapered at the apex, and narrowed into the marginate petiole. The colour is a deep sap green, breaking out freely in the young leaves into white, which is most prominent near the base of the

DRACÆNA IMPERIALIS.

leaf, and extends upwards irregularly. These variegated portions take on, as the leaves gain age, a deep bright rosy tint, so that in the leaves of different age the rosy hue is variously blended with the white. It is a remarkably fine plant"—an opinion which we most fully endorse.—T. MOORE.

PREPARING FLOWER-GARDEN PLANTS FOR WINTER.

TOWARDS the end of the month of October it is well known that all plants intended to be preserved in pots must be taken up out of the flower garden. There are two general modes of doing this, and a few words on each of these methods may supply a useful hint or two at this season. The one plan is to disturb the plants as little as possible, to lift them with a ball of earth

about their roots, and to pot them in pretty large pots, and place them in cool pits, frames, or houses. If carefully carried out, this plan answers well; but it takes much space, which, in most establishments, is very limited.

The other method is to take up the plants without any ball, to shake the roots clean out, cut them in freely, and pot them in light soil, in pots of the smallest possible size, plunging them after potting to the rim in a bottom-heat of 60° for a month or so, at the end of which time every pot will be crammed full of roots, and the plants may be gradually hardened off, and packed thickly on a greenhouse shelf for the winter.

Of course it is well to reduce the top as well as the roots in carrying out the latter plan, but this is not necessary to success, as the new fresh roots will support the whole head, better than all the old ones would have done.—D. T. Fish, *Hardwicke.*

ORCHIS FOLIOSA.

TERRESTRIAL Orchids are not cultivated with much spirit, except in one or two particular instances, although many of them, when well grown, will bear comparison with the more popular epiphytal species in general beauty and interest. I was reminded some time since of this fine plant, by seeing a handsome well-flowered specimen, shown by Mr. Thomas Ware, in a collection of hardy herbaceous plants at the Royal Horticultural Society's Bath Show. This plant was in the highest state of fresh healthy vigour, and bore seven or eight fine spikes of its purple blossoms. Mr. A. Turner, of Leicester, used to exhibit a still finer plant some years ago, most profusely flowered.

Orchis foliosa comes from Madeira, and is nearly, if not quite, hardy in this country, though a partially-shaded, cool frame is the proper place for fully developing the plant. Unlike many terrestrial species, this is by no means difficult to manage; indeed, it has flowered nicely planted out on the rockwork at Kew.

The plant succeeds thoroughly in a well-drained compost of fibrous loam, peat, leaf-mould, and sand, and like most other herbaceous orchids, likes abundance of moisture at the roots when growing. When the plant dies down, after perfecting its flowers, the pot should be plunged in sand, or coal-ashes, in a pit or frame, where no more heat is used than will exclude the frost. Many terrestrial orchids are damaged, or even killed, by keeping them in a high temperature, and by dryness at the root when at rest. Many of our own native species, as well as those from other countries in Northern Europe, get more moisture when at rest during the cold winter months than at any other period of the year; and cultivators may rest assured that to allow the soil around the succulent tubers of terrestrial orchids to become "dry as dust" must necessarily be one means of causing excessive evaporation from their surface, in consequence of which they become weaker, and less able to push up vigorously the following spring. It is a well known fact that many species of terrestrial orchids get weaker

every year they are grown in pots after importation, and there can be but little doubt but that keeping the tubers very dry during the resting period has much to do with this unfortunate result. If the species are sufficiently hardy, they may be planted out on rockwork. We have never seen the beautiful *Cypripedium spectabile* do better than it does in Messrs. Backhouse and Son's alpine garden at York, where planted in a bed of peat, on a cool bottom, it throws up its stout woolly growths, and blooms profusely every summer. Now this plant, and a great patch of *C. Calceolus*—on which I have counted upwards of twenty flowers at one time—are thoroughly established, and I have not the slightest doubt but that during the heavy winter rains the soil around their roots is thoroughly saturated with moisture. These facts speak for themselves with reference to the wintering of these beautiful orchids, in the culture of which so few succeed.—F. W. Burbidge.

COMMON ERRORS IN CELERY CULTURE.

IT is not my intention to enter into the details of the ordinary culture of this useful vegetable, because they are well understood, but to notice three common errors connected with its growth. The first I will mention is that of sowing too early. Although Celery is a biennial, yet when the seed is sown too soon—say by the 1st of February—and the plants are nursed a little, they are very liable to "pipe" or run to seed; while those raised from seed sown about the end of the same month seldom do so.

The second error is that in earthing up the plants too much soil is applied at one time, by which the hearts are covered in, and they are thus made to bulge out on one side, and become deformed; whereas when the operation is more lightly done, as well as oftener, the heads are kept upright, and the growth is much more vigorous.

The third error I have to notice, and which is perhaps the worst, is "earthing" or banking up the crops too heavily in autumn or before winter sets in; this is a very common practice, especially among cottagers, who often cover their Celery over "head and ears," if I may so express myself. This, moreover, is done with the view of keeping out the wet and frost from the crops; but in such cases the Celery fails to grow from want of air, in fact, as already indicated, the plants are buried, and they soon become rotten; and though the wet weather may be blamed for this, it may even happen when the ridges are covered with litter or boards.

Formerly, I used to fall into the errors above mentioned; but now I earth up my Celery more sparingly, taking care that the leaves or tops of the plants are well above the ridges, especially in the case of late crops. Hence I have had no reason to complain of my crops rotting, however damp and severe the winter may have been. Those who protect the ridges to fence off the weather, seem to overlook the fact that the means employed for this purpose prevent the escape of moisture by evaporation from the earth, in consequence of which the crops are more apt to rot than if their tops had been freely exposed to the air.—J. Wighton, *Cossey Park.*

BOUGAINVILLEA GLABRA.

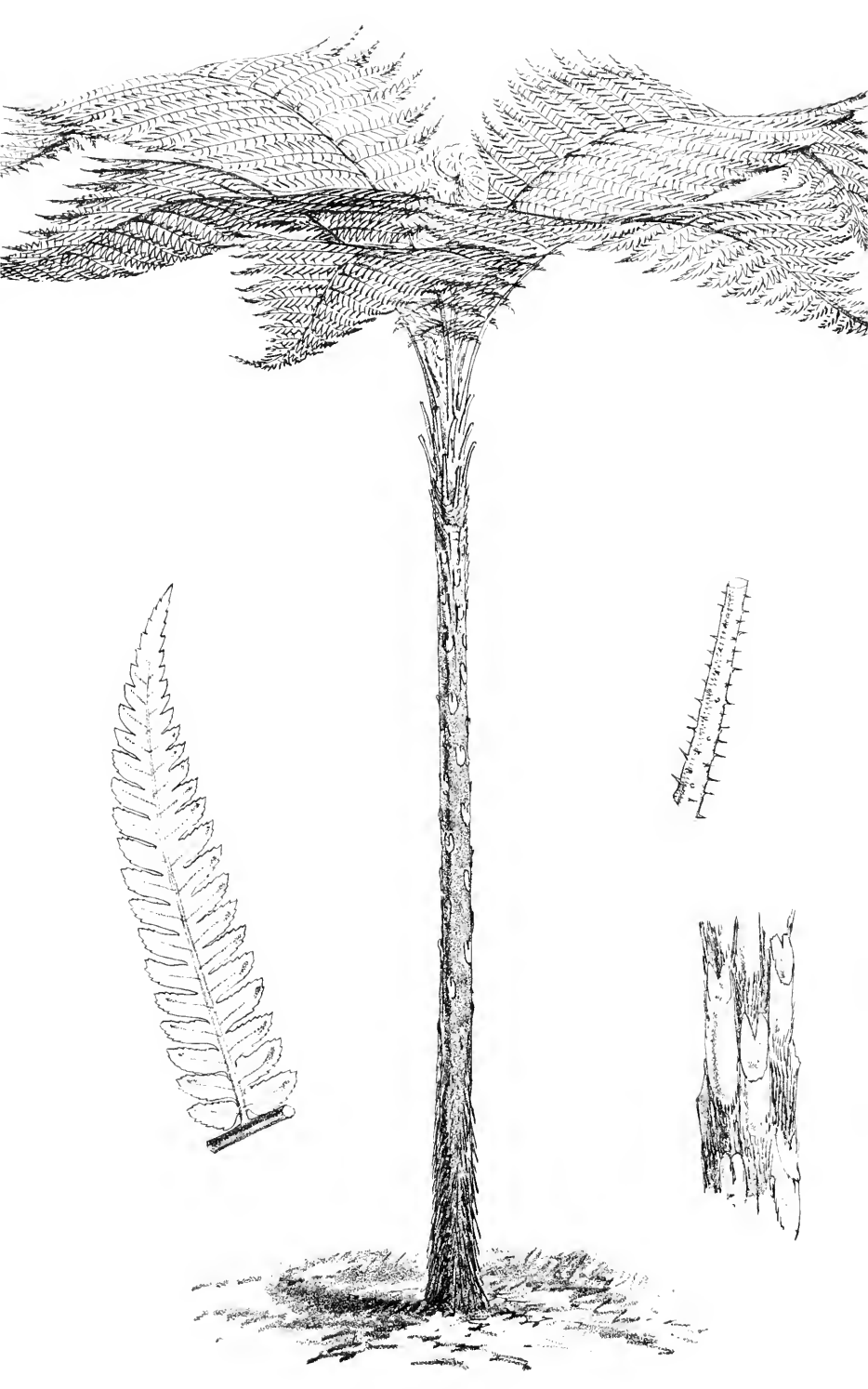
EVEN those horticulturists who do not possess a suitable house wherein to plant out and grow the beautiful *Bougainvillea glabra* may, if they possess a small stove, or cucumber house, or some similar structure, hope to succeed in flowering it. Why I require for it a stove is because I am about to advise that it should be grown in a large pot, or many small ones in small-sized pots, and to do so will require a moist and somewhat confined atmosphere during the growing period, to make up for the want of greater root-room. Very pretty small plants may be formed by growing a young plant along quickly in a moderate-sized pot, and in the full light and sunshine. The wood will require to be well ripened subsequently, by keeping the soil in the pot moderately dry, and placing the plant in a situation fully exposed to air, so that, in fact, it may lose the greater portion of its leaves by the natural process of ripening and falling off. To grow larger-sized plants in pots, the best way is to plunge the pots bodily into a convenient bed of some kind, and if a little extra warmth pervade it, so much the better. The plant should then be allowed to grow freely along under the glass roof of the structure, without any attempt whatever at stopping or pinching back. In either case a plentiful supply of root-moisture—occasionally consisting of liquid manure—should be given during growth, along with frequent syringings overhead, and a moist atmosphere.—WILLIAM EARLEY.

BLOTCHED SYCAMORE LEAVES.

BOTH before and after the "fall of the leaf" large black blotches may be seen on the leaves of Sycamore, *Acer Pseudo-platanus*, the Plane-tree of the Scotch. The number of blotches is variable, and they look somewhat like blots of ink. They are most prominent on the upper sides of the leaves, and are indented underneath. What is the cause of these blurred spots, which feel to the touch as if they were the cuticle of the leaf? Some of the blots seem as if two of them had fallen together, which led me to think that they were possibly the effects of cold rain or hail falling on the tender leaves in spring, the injured parts being changed into blotches by the influence of the atmosphere. I have bleached some of these scarred leaves with chloride of lime, but this did not affect the black spots, though it obliterated ink spots of equal size which I made upon them.—J. WIGHTON, *Cossey Park*.

[The Rev. M. J. Berkeley has been good enough to communicate the following explanation of the spots on the leaves above referred to:—

"It is no uncommon thing, as autumn advances, to see the Sycamore leaves defaced by broad black spots, marked on the surface with waved lines. These probably cause the leaves to fall sooner than they otherwise would, but the leaves themselves with their black spots may still be found in quantities in the spring; the waved lines then open, and clouds of spores are given out from the leaves. It is therefore clear that the spots are due to a parasitic fungus,



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Alsophila Leichardtiana. *Macarthuru*

which is known by the name of *Rhytisma acerinum*. Another species, with smaller spots, *R. punctatum*, occurs on sycamore leaves; and there are four other British species found on sallow, Andromeda polifolia, the common nettle, and on willow twigs. Several interesting species also occur in North America, one or two of which are highly developed."—M. J. B.]

ALSOPHILA LEICHARDTIANA.

WITH AN ILLUSTRATION.

THIS fine Australian Tree Fern is of recent introduction to our collections, and is not only remarkably distinct in character, but extremely ornamental. The stems are tall and slender, whence it has obtained the colonial name of Whipstick Fern. It has received three names from different botanists, having been described as *A. Leichardtiana*, by Dr. Mueller; *A. Macarthurii*, by Sir W. J. Hooker; and *A. Moorei*, by Mr. J. Smith. The former of these names has precedence, and must in consequence be adopted. On Mount Lindsay it grows with stems from 20 ft. to 25 ft. in height. The crown of fronds is light and spreading, and the stipes at length fall away, leaving clean cicatrices. The rachides are of a dark ebeneous purple and are mucronately-spinulose. The fronds are tripinnate, somewhat firm in texture, nearly or quite smooth, and without scales; the pinnæ are 1½ ft. to 2 ft. long, and about 8 in. wide, oblong-lanceolate and acuminate; the secondary pinnæ are oblong and acuminate, and the ultimate pinnules oblong and acute, the margins being spinulosely-toothed, and the back of the costa asperous and pubescent. The sori are copious, and situated close to the costa.

This fern has been found near Sydney, also at Illawarra, in the Hastings River district, and on Mount Lindsay. It is one of the most desirable of the Australian species, on account of the elegance of its slender stems and graceful fronds; and thrives perfectly in an ordinary greenhouse, with the treatment usually given to Tree Ferns.—T. MOORE.

NOTABLE NEW PLANTS AND FLOWERS.

[F.C.C. = First-class Certificate; S.C.C. = Second-class Certificate; B.C. = Botanical Certificate; F.C. = Floricultural Certificate.]

ABUTILON SELLOWIANUM MARMORATUM [F.C.C.].—The large cordate acuminate leaves of this variety are handsomely and very effectively marbled or mottled in angular blotches with yellow on a green ground.—*Messrs. Veitch & Sons: R.H.S., Sept.* 17.

ACTINIOPTERIS RADIATA [F.C.C.].—A minute Palm-like and very distinct Indian Fern, found growing on rocks and ruins.—*Messrs. Veitch & Sons: R.H.S., Sept.* 17.

BEGONIA ACME [F.C.C.].—One of the boliviensis hybrids, with dark green foliage, and deep scarlet flowers, of extra fine quality.—*Messrs. Veitch & Sons: R.H.S., Sept.* 3.

BEGONIA STELLA [F.C.C.].—The flowers of this variety, which resembles the preceding in general character, are of a pale clear glow of scarlet.—*Messrs. Veitch & Sons: R.H.S., Sept.* 3.

BEGONIA VESUVIUS [F.C.C.].—This variety is like the foregoing in habit, but has the flowers a pale orange-scarlet; very bright and effective.—*Messrs. Veitch & Sons: R.H.S., Sept.* 3.

DAHLIA OVID [F.C.C.].—Bright rosy-crimson, heavily shaded with purple; fine form and substance.—*Mr. C. Turner: R.H.S., Sept.* 3.

DAHLIA MISS DENNIS [F.C.C.].—White tipped with purple; good form and high centre.—*Mr. C. Turner: R.H.S., Sept.* 3.

DAHLIA MISS HARRIS [F.C.C.].—Creamy ground tipped with rosy-purple; form of bloom and of florets, fine.—*Mr. Harris: R.H.S., Sept.* 3.

DAHLIA JULIA DAVIS [F.C.C.].—A fine pure yellow self; size, florets, and outline good.—*Mr. J. Keynes: R.H.S., Sept.* 3.

DAHLIA LETTY COLES [F.C.C.]—A pretty fancy variety, the pale rose-coloured ground streaked with white and pale red.—*Mr. J. Keynes: R.H.S., Sept.* 17.

DAHLIA MRS. LEWINGTON [F.C.C.].—Purple, with the surface of the flower brightened with rose; good in outline, florets, and substance.—*Mr. J. Keynes: R.H.S., Sept.* 17.

DAHLIA MRS. STANCOMB [F.C.C.].—Canary-yellow tipped with reddish buff; good florets and outline.—*Mr. J. Keynes: R.H.S., Sept.* 17.

DAHLIA PARROT [F.C.C.].—A fancy variety, the ground-colour yellow, spotted and flaked with brown and red.—*Mr. J. Keynes: R.H.S., Sept.* 17.

DAHLIA QUEEN EMMA [F.C.C.].—A nicely formed rose-coloured variety, of a good depth and substance.—*Mr. C. Turner: R.H.S., Sept.* 17.

DAHLIA WHITE QUEEN [F.C.C.].—A good pure white self, the outline, florets, and centre being in keeping with good quality.—*Mr. G. Wheeler: R.H.S., Sept.* 17.

GLADIOLUS AGATHERICUS [F.C.C.].—Flesh slightly veined with rose, and having broad carmine stains on the lower divisions.—*Messrs. Kelway & Son: Manchester H.S., Sept.* 3.

GLADIOLUS GRACE DARLING [F.C.C].—Mauve, veined with rose; a charming flower, of fine form.—*Messrs. Kelway & Son: M.H.S., Sept.* 3.

GLADIOLUS LADY BRIDPORT [F.C.C.].—Flesh-colour tinted with pink, and feathered with carmine.—*Messrs. Kelway & Son: M.H.S., Sept.* 3.

GLADIOLUS MRS. REYNOLDS [F.C.C.].—White, heavily veined with carmine-rose; very fine.—*Messrs. Kelway & Son: M.H.S., Sept.* 3.

GLADIOLUS ORANGE BOVEN [F.C.C.].—Buff flamed with orange; very fine and distinct.—*Messrs. Kelway & Son: M.H.S., Sept.* 3.

GLADIOLUS OVID [F.C.C.].—Primrose suffused with rose; a novel and pleasing flower.—*Messrs. Kelway & Son: M.H.S., Sept.* 3.

GLADIOLUS PORCIUS [F.C.C.].—Scarlet veined with white, fine and showy.—*Messrs. Kelway & Son: M.H.S., Sept.* 3.

NEPENTHES CHELSONI [F.C.C.].—A hybrid between *N. Hookerii* and *N. Dominiana*, having short broad fringed pitchers, of a deep green colour, heavily spotted with rich dark red-brown.—*Messrs. Veitch & Sons: R.H.S., Sept.* 17.

NEPHROLEPIS DAVALLIOIDES FURCANS [F.C.C.].—A very handsome variety of *N. davallioides*, in which the ends of the pinnæ are forked, usually twice, sometimes oftener.—*Messrs. Veitch & Sons: R.H.S., Sept.* 17.

ODONTOGLOSSUM ROEZLII [F.C.C.].—A charming new epiphytal orchid from New Grenada, having thin compressed ovate pseudobulbs, grassy leaves half an

inch broad, and large flat expanded flowers, the sepals of which are oblong apiculate, the petals spathulate-oblong, white, with a purple blotch at the base, and the lip broad, wedge-shaped, emarginate, marked with yellow near the disk.—*Mr. W. Bull: R.H.S., Sept.* 17.

Phyllanthus nivosus [F.C.C.].—A variegated-leaved Euphorbaceous stove plant of considerable beauty, from the South-Sea Islands. The leaves are cordate oblong, blunt, bright green, more or less variegated with pure white, and sometimes becoming nearly or quite all white, in which state it is very effective for contrast. The women of Tanna use it for head-dresses.—*Mr. W. Bull: R.H.S., Sept.* 17.

THE SCARCITY OF SUPERIOR WALL FRUIT—ITS PROBABLE CAUSES.

WE all know the pithy, rather than polite, proverb about the fate of a dog with a bad name. It seems to me we treat our springs very much in the same way. Whatever fails, it is the spring frosts, or failing these, electricity, the latter being the more useful scapegoat of the two. I was forcibly reminded of this the other day. A gentleman asked me why the centre of his apricot tree, the only portion that had any fruit upon it, suddenly died? I answered "I could not tell; these sudden deaths seemed constitutional to apricots, &c." Another gentleman declared it was electricity, and my querist accepted that explanation at once, and the two gave themselves airs, as if in commiseration of my ignorance, and looked as much as to say, "Very strange that we should know more than he;" and they strutted away, crowing and chattering about the electrical fluid and its currents like full-fledged philosophers.

It is very much the same about our springs. Not but what they are bad enough, and every year almost they seem getting worse. The frost comes later and hits harder, and works perhaps more mischief. But the latter is the question in dispute. What and how much of the mischief is wrought by the spring frosts, and what proportion, if any, of it happens anterior to them? Take the blossom buds of this year, for instance. Many of them were most imperfect; they lacked substance, strength, colour, and some even had parts wanting. How could these manifest signs of debility or sheer deficiencies originate in the frosts of the spring? It seems quite unreasonable to suppose that they could, and I am able to present absolute facts to prove that they did not.

I have seen several glass walls that were enclosed during the last winter, and these are almost as bare of fruit as the uncovered walls beside them. These facts are quite incompatible with the theory that all the mischief was caused by the spring frosts. The glass could have baulked that, but it was powerless to mend weak or imperfectly formed blossoms. Again, these imperfections were confined to fruit on the open walls. I have heard little or nothing of Peach, Nectarine, or Apricot failures on old-established glass walls, or in peach-houses, unless where the bullfinches, unusually plentiful this year, cleared off the buds. From all which I gather that the wet autumn of last year has as much or more to do

with our semi-bare walls as the spring frosts of this. I admit that it is difficult to explain how even that can cover all the observed facts, the capricious flowering, for instance, of apricots in successive battalions of blossom. Instead of all coming together, they opened in companies of 50 to 200 at a time, and after a week another succession, and so on several times. Again, the blossoms set as capriciously as they opened. We have some crowded with golden fruit,

MACLURA TRICUSPIDATA (young state), see p. 233.

more almost bare, and very thin. But then the blossoms themselves were not all alike. Some were utterly worthless, others middling, a few all right. Neither do I deny that a few, perhaps a good many, of each sort got frost-bitten. But my point is, that but a small per-centage of the evil came of the spring frost; that it was laid anterior to it; and that had no frost come, Peaches, Nectarines, or Apricots on the open walls would have been a semi-failure this summer.

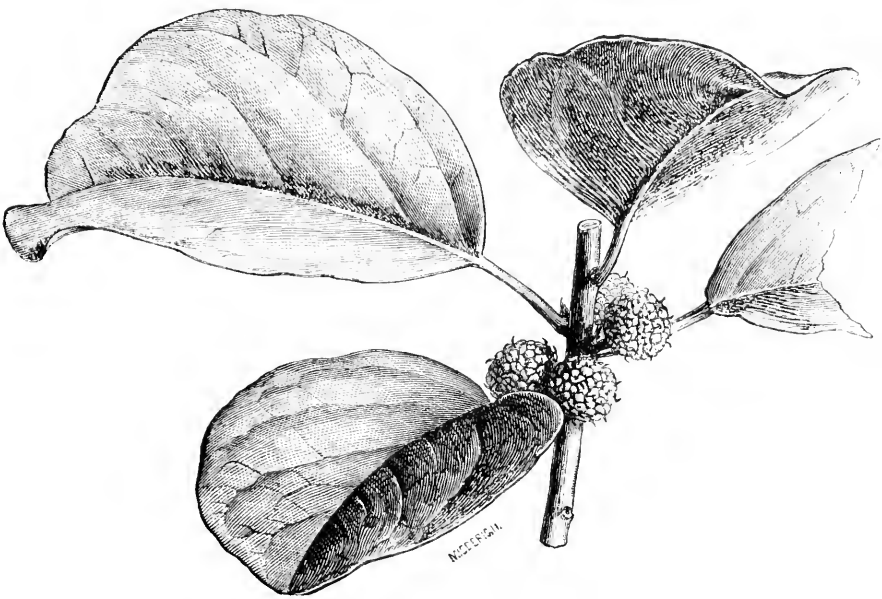
The foundation of barrenness or fruitfulness is laid months before. If autumnal suns fail to finish or mature the buds, it is in vain that wooing zephyrs, dews, and sunshine bid them come forth and grow into perfect fruits. Be the spring ever so genial, they cannot in such case do it. It is like asking a paralytic to leap, dance, or run with an athlete: be the road or course ever so smooth, he cannot do it. It is even so with the crippled buds. No geniality of season, no shelter of glass even, can bring a perfect fruit out of an imperfect, and the skill of the cultivator should be directed rather to the formation of strong buds than

the coddling of weak flowers in the spring. The former must be done, while the latter may not with impunity be left undone.—D. T. Fish, *Hardwicke*.

MACLURA TRICUSPIDATA.

THE following account of this ornamental hardy deciduous tree is abridged from the *Revue Horticole*, to which source we are also indebted for the illustrations. The plant is one of those which, like the Ivy and others, takes on two distinct forms, the one characteristic of infancy, the other of maturity.

The figure on p. 232 represents *Maclura tricuspidata* in its state of infancy, as growing in the French gardens in 1864, two years after its introduction from China. That subjoined represents an adult branch of the same species, bearing



MACLURA TRICUSPIDATA (mature female).

female flowers, cut from the same mother-stock from which, seven years previously, the branch represented by the opposite figure had been taken. M. Carrière now gives the following description of the plant in its matured character:—

It is a small diclinous tree or shrub, of bushy habit, much branched, with divaricate branches, a greenish-white milky juice exuding from its herbaceous parts when broken. The branches are pendent or spreading, spiny in the young state, spineless in adults. The leaves are caducous, coriaceous, thick, dark green, shining as if varnished; those of the young trees being three-lobed; while those of the adult trees are oval, broadly rounded, and sometimes cucullate. The male flowers are not known. The female flowers are united into small subspherical heads, about two-fifths of an inch in diameter, solitary or sometimes aggregated in the leaf axils; these flowers expand in July and August, and have

then a whitish aspect due to the stigmatic papillæ, which are rather prominent. The roots, both of the young and the adult plants, are orange-red, and of a fleshy, spongy nature, like those of *Maclura aurantiaca*.

M. tricuspidata comes from Japan, and probably from the temperate regions, which seems to indicate that its constitution may be rather tender. At Paris, the young parts which have not been sufficiently ripened are frequently destroyed by the winter. Hence it would be prudent to protect the young plants during that season, which is, however, not necessary after they have become established, for then, if the tender parts are destroyed, vigorous buds start again from the stem or from the roots. M. Carrière recommends budding with half-ripened buds, under a bell-glass, in July-August, or root-cuttings, as in the case of *M. aurantiaca*, as the best means of propagation.—T. MOORE.

HARDY EVENING PRIMROSES.

UNDER the calm influence of the still midsummer evenings, several species of *Œnothera* or Evening Primrose expand their peculiarly delicate and fragile blossoms. The suddenness of their expansion, associated as it is with the deepening shades of exhausted day, and their beauty of form, seem to invest the flowers with a peculiar poetic interest, which, however, is in some measure dispelled by the bacchanalian name, derived from the Greek *oinos* and *thera*, and suggesting that the *Œnothera* is an incentive to wine-drinking.

The cultivation of these beautiful hardy plants has very much and most undeservedly fallen off of late years. The genus affords us so many distinct-habited kinds that some one, or more, may be grown and welcomed in any garden, however limited in space. There are hardy annual kinds, such as *Œ. clavata*, *Œ. tetraptera*, and *Œ. pinnatifida*, the last being the tallest, and all white-flowered; *Œ. minima*, *Œ. dentata*, and *Œ. grandiflora*, which are all yellow; while amongst rosy-reds we possess *Œ. concinna*, *Œ. tenella*, *Œ. amœna*, *Œ. densiflora*, and *Œ. decumbens*, which all have purplish-tinted flowers, and vary in height from 6 in. to 15 in. All these may be sown either in early spring or autumn, as hardy annuals ordinarily are, and they will afford a very interesting display. It should, however, be mentioned that with one or two exceptions all the annual species I may name flower most freely upon poor, open, stony soil. When grown in too rich soil, they have a great tendency to run into strong leaf-and-branch growth, with comparatively few flowers. This is a great drawback in the case of flowers possessing so transitory an existence. The exceptions to this rule are *Œ. sinuata* and *Œ. tetraptera*, which require rich quarters. The purple-flowered sorts I have mentioned above, including another, *Œ. viminea*, from California, make exceedingly interesting pot plants, if the seeds are sown in moderately poor soil, in the pots in which they are to be bloomed.

Amongst the biennial Evening Primroses we possess *Œ. sinuata* above referred to, in connection with pot culture; *Œ. biennis*, the sort more immediately in view in the selection of the generic name, and *Œ. Lamarckiana*, one of

the grandest of the tall-growing, yellow-flowered kinds first named. The fine bright yellow and very handsome *Œ. Drummondii* is, in favourable soil, to be regarded rather as a biennial than a perennial, though in suitable positions it is strictly perennial.

Coming now to the more permanent perennial species, we meet with the well known and remarkably showy dwarf *Œ. macrocarpa* or *Œ. missouriensis*, as well as *Œ. fruticosa*, in three varieties, and *Œ. riparia*, all with yellow flowers; whilst amongst white-flowered sorts we have *Œ. taraxacifolia*, *Œ. speciosa*, *Œ. anisoloba*, the latter growing 2 ft. to 3 ft. high, and *Œ. marginata*, a species which grows about 9 in. high, and whose fragrant flowers are amongst the very largest of the family. These, with many others, are well worthy of culture and study.—WILLIAM EARLEY, *Valentines*.

GARDEN GOSSIP.

WE have long been familiar with the *Cordyline australis* as a free-growing greenhouse plant, but it appears to be much hardier than has been hitherto thought. It seems, indeed, to be quite hardy in the climate of Surrey, a considerable number of plants raised from New Zealand seeds, directly imported, having stood out completely unharmed for the last four years, in a bleak and cold situation in Mr. G. Jackman's nursery at Woking, where they are growing as freely as Yuccas, and as healthily as any indoor plants. This is rather a severe test, since not only have the plants had no protection, but the site where they are planted is that of a drained pond, and being very much exposed, is not at all favourable for tender plants. They have now formed leaves from two to three feet long.

—— ONE of the prettiest of recently introduced stove plants is the *Phyllanthus nivosus*, so named from its leaves becoming snow-white in colour over a considerable portion of the plants. In Australia it is called *Phyllanthus variegata*. This plant was first discovered by Mr. C. Moore, in the Island of Tanna, one of the New Hebrides group, in 1850. He could obtain no account of its history or original habitat, but found it was cultivated and prized by the natives. It was first observed by him at the annual ceremony of rejoicing among the natives at the ripening of the Yams, when it was worn as a head-dress by the Tanneso women.

—— THE beautiful *Lilium Wilsoni*, which we figured in our volume for 1868, and which was at first thought to belong to L. Thunbergianum, reproduces itself from seed, and thus far itself furnishes evidence of its distinctness. Seedlings from the original bulb have this season flowered with Mr. Wilson, and prove to be exactly like the parent in colour and marking.

—— THE *Vegetable Crops* in the gardens at Keswick Old Hall, Norwich, have been nearly consumed by the Purple Clover Weevil, *Apion apricans*, which has travelled from a stack of clover hay just outside the garden wall, and threatens to eat up everything, if some means are not found to check its progress. The vegetables that have suffered most are celery, parsley, broad beans, parsnips, scarlet-runners, French beans, peas, lettuce. The insects do not, however, appear to care for the cabbage tribe.

—— WE may recommend the *Premier Runner Bean* as a thoroughly original and distinct kind; it was raised by Mr. R. Dean, and a few years since received a First-class Certificate at Chiswick as a superior garden variety. The pods are not large and coarse, but exactly resemble those of a good dwarf Bean; and it is most tender

and well flavoured when cooked. The dry seed is red, and slightly speckled, resembling that of the Negro in size. It grows to a height of 5 ft., and bears profusely from close to the ground to the top.

—— Amongst the *New Tomatos*, that called *Hathaway's Excelsior* seems likely to be one of the most acceptable for general cultivation, as it is moderate in growth, flowers early, and fruits so freely as to be the better for a little thinning. The fruit is of good average size, of a rich colour, and extremely handsome when ripe, probably the handsomest of all the Tomatos, being plump, quite round, and devoid of all sutures. It will no doubt make a good pot kind. It has lately received a First-class Certificate at Chiswick.

—— Mr. Tillery writes that he has grown *Osborn's Forcing French Bean* this year in the forcing-houses, and found it excellent for the purpose of forcing, being very dwarf and prolific. The greatest cropper, however, with him has been the *Canadian Wonder*, and a wonderful variety it is, he says, for size of pods, and the long time it keeps in when bearing them. Its strong habit is rather against it where the shelves or spaces in which it is forced are circumscribed; but where room can be found, it will be found to be the most productive sort grown. It is as good a bearer out of doors as when forced.

—— Samples of a very beautiful *Seedling Early Apple* have been sent us by Mr. G. Cooling, nurseryman, Bath. It is of handsome form, and beautifully mottled all over with red, but is very acid, and deficient in flavour, and therefore only worth growing for its ornamental character. It is reported to be a sure and heavy cropper, not having failed during the past five years.

—— As the *Sempervivums* are coming into fashion in modern flower-gardening, it may be well to note that the pretty species now so generally grown in gardens under the name of *S. californicum*, and which is a native of the Alps of Dauphiny, should more properly be called *S. calcareum*. The pretty cobwebbed *S. arachnoideum* does not succeed well in all places; and if grown in the shade or in a damp spot, is apt to lose its cobwebby threads. Of these webbed *Sempervivums*, that known as *S. Laggeri* is probably the best.

—— The *Pyramidal Training of Currants* and the *Espalier Training of Gooseberries* are both to be recommended. At Madresfield Court the former plan is highly spoken of; while the latter has been tried in the gardens at Ashridge, with very satisfactory results.

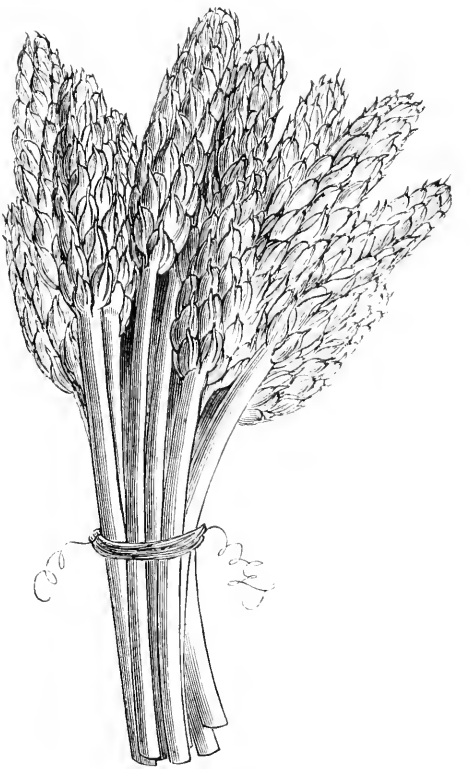
—— Mr. Tillery reports that the *George F. Wilson Pea* has with him turned out one of the greatest acquisitions he has ever grown, being most prolific and of first-rate flavour; it was preceded with no flourish of trumpets, although certificated by the Committee of the Royal Horticultural Society, to whose judgment it does great credit. It grows about the height of the old favourite Veitch's Perfection, but is an improvement on that good variety in having larger pods, and in being a better cropper.

—— At the *Vienna Universal Exhibition*, under the group *Agriculture*, *Horticulture*, and *Forestry*, Messrs. Dick Radclyffe and Co. have received a medal of Merit for their exhibition of garden and farm seeds, tools, &c.; Messrs. Carter and Co. and Messrs. Sutton and Sons have received the medal for Progress; Mr. J. Caven Fox and Mr. E. Lloyd have obtained the medal of Merit; and Messrs. G. and T. Fowler honourable mention.

—— What is called *Bath Asparagus* consists of the young flower-scapes of *Ornithogalum pyrenaicum*. It is so little known, that we borrow from the *Gardener's Chronicle* the following woodcut and memorandum concerning it:—

"Passing through the streets at dusk one evening [early in June], we saw what we took, at

a glance, to be bunches of young Wheat-ears tied up. The morning's reflection convinced us that this could not be, and, moreover, revealed that they were the young flower-scapes of Ornithogalum pyrenaicum, and on visiting the market we saw a quantity of them, of which we purchased a sample, under the name of 'Wild Asparagus.' Part of the supply we entrusted to our artist-pictorial, the result of which is before the reader; the remainder we consigned to our artist-culinary, and her success was such that all who partook declared it to



BATH ASPARAGUS.

be the best substitute for Asparagus yet tried, better by far than the Hop-tops, of which our Belgian and Dutch friends make so much, and better than any 'green corn' we have yet tasted, in spite of what our American friends may say, and better a great deal than Hawthorn leaves. How abundant the plant must be about Bath, and yet in other towns close by, where we made inquiry, it was not known. The abundance of the supply in Bath market was such, that we can hardly imagine that it was all wild, some must surely have come from the cottage gardens."

—— THE value of the *Salvia patens* for mixed borders can scarcely be over-rated, no plant of the same blue colour being equal to it for summer bedding. But it is scarce. The following successful plan of cultivation, recommended by Mr. Taylor, of Botcherby, may help to make it more plentiful. As soon as the plants are injured by frost in autumn they are lifted and cut over, afterwards put pretty thickly into ordinary bedding plant-boxes, with a few handfuls of soil to each root, well watered, and set in any warm place to make them break, which they will soon do. When the young shoots are about an inch or two in length, they are removed to a cooler place amongst the bedding plants until March, when they may be divided into the desired quantity, and be potted singly, or returned to the boxes. A good stock of strong plants will thus be secured.

—— THE following mode of *Propagating Lobelia fulgens* has been successfully practised at Mr. Ware's, Hale Farm Nurseries, Tottenham. The pots containing the Lobelias are plunged in cocoa-nut fibre; then the flowering-stems are nearly cut through about an inch from the base, and laid down on their sides partially covered by the fibre, using pegs or stones at intervals, to keep them in position and close to the plunging material. The result is that plants are formed at every joint of a shoot, for the joints root readily; and thus an abundant supply of plants can be obtained. This plan, moreover, aids the working of the old method of taking off the young growth that comes round the base of the stem, as the severance of the main spike directs the vigour of the plant mainly to the production of this growth.

—— THE extremely elegant inflorescence of *Astilbe barbata* (better known as *Spiræa japonica* or *Hoteia japonica*) has led to its being largely grown as a forcing plant, and nothing can be more charming than it is when so treated. Plants growing in 24-sized pots often bear twenty or more finely developed panicles of flowers. The pots should stand in saucers of water—this being an important means of ensuring success. Want of water is inimical to the well-being of the plant; moisture is indispensable to its fine development. Some growers prefer to import the roots, when perfectly at rest, from Holland or Belgium, believing them to be better ripened than home-grown plants. English-grown plants, however, properly cared for, are equally good with the foreign ones.

—— IN Mr. Hepworth's paper on the *Points of Perfection in Tulips*, at p. 196, under No. 4, second line, the word "flamed" should read "plated."

GARDEN WORK FOR OCTOBER.

FLOWERS.

ONE of the great secrets of decoration is to have some part of an establishment always in a state of perfection. When autumnal colds and rain threaten the garden with destruction, all under glass ought to be growing with freshness and beauty. In the stove, for instance, where the finer specimen plants are about to go to rest, a whole lot of winter-flowering plants should be coming on, if not to fill their places, at least to fringe them round with gay colours and fresh green leaves. *Euphorbias*, *Begonias*, *Justicias*, and *Gesneras* are among the more useful plants for these purposes. It thus comes to pass that stove treatment through the autumnal and winter months, where there is but one house, requires to be double and different, or a balance between two states or conditions of plants, the resting and the flowering. The *Bougainvillea* is a most useful plant for winter blooming and invaluable for decorative purposes; it ought not to be pruned in, nor dried off like Allamanda, Clerodendron, Stephanotis, or other climbers. Every plant-shelf and stage should be made scrupulously clean before bringing in winter-flowering stuff. *Orchids*, excepting winter-growers or bloomers, should be kept as quiet as possible, and late growths matured. See that the leaves and pseudobulbs are thoroughly cleaned; and guard against a high temperature, as it is bad culture as well as great extravagance to start for the winter with a high temperature.

All greenhouse plants must at once be housed. In doing this the drainage should be examined, and rectified if needful; worms should be hunted for and destroyed; all moss and sour soil should be scraped from the surface, and the pots should be thoroughly washed. It is impossible to admit too much air after housing, being careful, however, not to set choice *Heaths*, &c., in the teeth of an artificial wind that might place them in much colder quarters than out of doors. Late-flowering *Fuchsias*, *Zonal Pelargoniums*, &c., may be thinly intermixed with the hard-wooded plants, to lighten them up with colours during the autumn.

Balsams, *Celosias*, *Cockscombs*, &c., are very useful for the same purpose. Attend carefully to *Chrysanthemums*, late-flowering *Salvia splendens*, and others, and shift into their final pots early *Chinese Primroses*, *Cinerarias*, and winter-flowering *Mignonette*. All bulbs of *Hyacinths*, *Narcissus*, *Tulips*, and *Crocuses*, &c., should have been potted last month, and plunged out of doors in old tan or cocoa fibre; under such circumstances, the roots are excited to action, and get the start of the tops to such an extent that before the latter start half an inch the roots have filled the pots. Upon this early and strong root-growth the future size and sweetness of the flowers depend. During the month early-rooted *Pinks* (pipings or plants) and perpetual *Carnations* should be potted for forcing or winter flowering; also a few dozens of early *Neapolitan* and other *Violets*; if placed under glass at once, they will bloom on the conservatory shelf right into and through the winter.

Out of doors the great object is to preserve the beauty of the scene as long as possible, and provide a succession of plants for next year. All the early cuttings should be looked over, failures, if any, noted and made good, and late propagation prosecuted to completion. In making up losses it is better to insert by themselves fresh batches, for if a few cuttings are put in among early ones, the earlier will rob the later, and prevent them from rooting or growing. Many flower-garden plants, notably *Petunias*, *Ageratums*, *Verbenas*, and *Calceolarias*, root and keep best when put in late; the wood can hardly be too soft, nor the cutting too short of these and similar plants. *Alternantheras* must have more heat than most flower-garden stock, and the store pots of these and *Iresines* form a nice fringe to a stove shelf, while the plants do remarkably well in such positions. The beauty of flowers is best preserved by frequently picking off the dead blooms and leaves, and making a dead set against all seed-bearing. After the first touch of frost, or before, if possible, clear the ground, manure it well, and plant the beds and borders with *Hyacinths*, *Narcissus*, *Tulips*, *Crocuses*, *Snowdrops*, and other bulbs and spring flowers or early-blooming annuals. Mixed borders may also be manured and dug, large plants reduced, and vacant spaces filled with spring flowers. Continue to mow the short grass weekly, till its growth is arrested by the frost. Sweep, roll, and mend walks, and make up by neatness and cleanliness, as far as that can be done, for the lack of the beauty that must inevitably be passing away for a season.—D. T. Fish.

FRUITS.

In-Doors.—*Pine-Apples:* Watch that the heat does not become too violent in any of the beds which have been renewed, as loss of roots and injurious consequences may ensue. In arranging plants for the winter, endeavour to keep them as near the glass as possible, that they may have the full benefit of light. The plants that are intended to show fruit early should now be kept moderately dry, with a minimum night temperature of about 60°. For fruiting plants, the instructions given last month may be followed. Give air whenever practicable, if for ever so short a period. *Vines:* Prune and dress those in the early houses. Attend well to the preservation of ripe grapes, by keeping a dry, cool atmosphere, and removing all berries the moment they show signs of mouldiness or decay. *Peaches and Nectarines:* Prune the trees in the early houses, and then give them a dressing of the following mixture:—Lime, sulphur, soft soap, clay, and tobacco-water, reduced to the consistency of paint with warm water; the shoots should afterwards be neatly tied down to the trellis. Give successional houses abundant air in dry weather, but keep them closed in dull, wet weather, and give late houses a little fire-heat to ripen the wood. Prune all trees as soon as the leaves are off. This is a good season for exchanging exhausted trees; choose those

trees which have been trained six or seven years, in preference to younger ones: and in planting take care to spread the roots carefully out. *Figs:* Give these abundance of air in mild weather, but be careful not to expose them to much frost, as the embryo Figs may get injured. *Strawberries:* Keep all the runners pinched off the plants prepared for forcing as they appear; attend carefully to the watering; very little will be required, unless the weather be very dry; the principal point to be aimed at now is to get the crowns as well formed and thoroughly ripened as possible, before the short dark days. *Melons:* A good brisk heat is necessary to ripen late fruit.

OUT-DOORS.—Continue to gather and store away *Pears* and *Apples* as they become fit. Look carefully over those previously stored, and pick out bad ones. Gather *Medlars*, *Quinces*, *Filberts*, and *Walnuts* when fit. Plant *Fruit-trees* of all kinds, in properly prepared ground, as soon as the leaves begin falling; never lose sight of the importance of draining, and of making the holes wide enough to allow the free extension of the roots horizontally. Commence pruning *Gooseberry* and *Currant* bushes, saving a sufficient supply of the strongest shoots for propagation.—M. SAUL, *Stourton.*

VEGETABLES.

THE permanent crops of *Carrots* should now be taken out of the ground without loss of time; those who grow large quantities, and are anxious to keep the later ones as fresh as possible, would do well to clamp about half of them, proceeding with them precisely as in clamping the potato; they keep remarkably well so treated. *Beets*, which should all be got up quickly now, may be stored in part, in exactly the same way, and with much benefit to such as are wanted for late use; it is always advisable to place a little straw over the roots before putting on the soil, and to choose a dry situation for them. Proceed with the earthing-up of the successional crops of *Celery* at every favourable opportunity—which, as regards the weather, is during fine periods, and when both the plants and surface soil are tolerably dry. In many instances earth-worms are very injurious to blanching celery, as they destroy the tender young leaves which are blanched; and such other pests as slugs, &c., often do mischief; it is advisable therefore to dust a little fresh lime or soot along the rows, as a deterrent to these and similar enemies. Proceed vigorously with the necessary transplanting of seedling *Lettuces* and *Endives* intended to stand the winter for early spring use; these should be planted out thickly, on the borders formed at the foot of walls facing sunny south or south-east aspects. If the weather continues moist and open, as it is whilst I write, it may be necessary to make another small sowing on a very much sheltered sunny aspect; such late sowings, when they stand the winter, often come in very useful just preceding the spring-sown crops. Transplant *Cauliflowers* on to their permanent winter quarters, which should be in a position where it may be convenient to place a frame and lights over them during very severe frosts in winter; dibble the plants out moderately deep at this time, as an additional guarantee against the onslaughts of very severe frosts. Carefully remove the decayed leaves from around the crowns of *Seakale*, and prepare for forcing the earliest batch, placing a little heap of cinder-ashes around each, as a neutraliser of too great heat, should such happen to be generated in the preliminary forcing operations; this is sometimes the case, and results in severe injury to the crowns, by scalding them. Make a last sowing out of doors of *Radishes* for mid-winter pulling and supply; a somewhat large breadth should be sown upon a somewhat elevated sunny aspect, and should the weather prove mild, they will be very useful by and by; even if severe weather ensues, they may be protected with light straw litter, and will still produce a most acceptable crop.—WILLIAM EARLEY, *Valentines.*

Tacsonia insígnis

TACSONIA INSIGNIS.

WITH AN ILLUSTRATION.

SPECIMENS of this beautiful novelty, were obligingly sent to us for illustration, some time since, by Mr. R. Anderson, gardener at Sowerby House, Hull, where the plant was raised. The honour of introducing it to this country belongs to Yarborough L. Greame, Esq., by whom seeds were sent to England some few years since, and who in a memorandum communicated by Mr. Anderson, writes as follows concerning it:—"I saw the *Tacsonia* growing in a deep richly-wooded gorge, on the eastern slope of the Cordilleras, between La Paz and Chulumani, in the north of Bolivia. It seemed to like to climb to the end of a long branch, and then hang in festoons, swayed backwards and forwards by the breeze." This description of its manner of growth is, we learn, very accurate, since it supports itself by its tendrils till it begins to flower, and then hangs loose, each branch having as many as a dozen or fourteen flowers open in different stages of development. We believe the plant is to be sent out by Messrs. Backhouse and Son, of York.

A woodcut figure of this fine and very distinct species was recently given in the *Gardeners' Chronicle* (1873, p. 1112), where it was fully described by Dr. Masters, who has made a special study of the family of Passionflowers. It is there stated to be remarkable for its large ovate-lanceolate leaves, which are of a shining green colour, rugose or bullate on the upper surface, and covered beneath with rust-coloured down. The stipules are like those of *T. pinnatistipula*, but more deeply divided; but the bracts are different, as also are the size and construction of the flower, which measures some 6 in. across. The tube is cylindrical, with a cuboidal dilatation at the base, and is thickly covered with down. The sepals have unusually long horns, and their colour on the inner surface, as also that of the petals, is a lustrous crimson, the colour, however, changing rapidly after gathering to violet-rose. The mouth of the tube is adorned with a beautiful incurved fringe of short filaments, which are blue mottled with white.

There can be no doubt that we have here a most charming addition to our cultivated Passionflowers, for the plant is not only a free flowerer, but requires merely the ordinary greenhouse or conservatory treatment.—T. Moore.

JOTTINGS ABOUT SOME OF OUR NEW GRAPES.

OF late years, a very large number of new Grapes has been introduced, and brought prominently under the notice of horticulturists. Some of these varieties possess considerable merit, and consequently have found their way into general cultivation, but none of them to the extent of such old favourites as the Black Hamburgh or Muscat of Alexandria; still, they have displaced and are displacing many of the old varieties which were in cultivation twenty or thirty years ago, such as West's St. Peter's, Sweetwater, and the Black, Grizzly, and White Frontignans, &c.

Although we have not been able to introduce any new sorts likely to displace the two old favourite varieties named above, it must be admitted we are making very considerable progress, more, however, in improved appearance, including compactness and symmetry of bunch and size of berry, than in superiority of flavour, for doubtless it will be difficult to surpass the old Frontignans in that respect. Many of the newer kinds possess some really valuable qualities, and are often in many respects decided improvements on older sorts; but it is somewhat unfortunate, though not the less true, that most, certainly not all, of them have some serious defect or defects, totally disqualifying them for general cultivation. What greatly adds to the difficulty of deciding which kinds are worthy, and which kinds are not worthy of general cultivation, is the want of uniformity in the development of the defects—in one place a variety being all that could be desired; in another with the conditions apparently similar, all but worthless.

As the season is again coming round for selecting and planting vines, the following remarks on some of the more recently introduced sorts may not be uninteresting:—

Golden Hamburgh.—I have frequently seen this variety grown from 5 lb. to 6 lb. weight, and finished in the best style, at Lochryan House, the residence of Sir William Wallace, Bart., and grown on an aërated border. When thus grown, it is certainly one of our showiest, and one of our finest-flavoured grapes; but it labours under the serious disadvantage of having a weak constitution, and unless grown under the most favourable conditions, is seldom seen in a good state. It has an additional defect, in that it does not hang well after becoming ripe. If this grape had the constitution of a Trebbiano, it would be invaluable.

Foster's White Seedling is a white grape, which was introduced with a considerable flourish of trumpets some years ago. It possesses considerable merit as an early forcer, and for pot-culture. When planted out in rich borders, it cracks at the junction with the foot-stalks, just before ripening. I have in consequence ceased to grow it.

Duchess of Buccleuch.—Perhaps the finest-flavoured of all grapes, not yielding the palm to the old Frontignans, of which it is apparently a seedling. It is a strong-growing variety, with a good constitution, producing large bunches with small berries. It should be used soon after being cut, as the fruit soon becomes discoloured.

White Lady Downe's very much resembles in all respects the Black Lady Downe's (except the colour), of which it appears to be a seedling, and should be grown as a companion to that invaluable late grape.

Madresfield Court Black Muscat.—This is one of the newer grapes about which there is great variety of opinion, some lauding it highly, and others condemning it as worthless on account of its propensity to crack in the ripening process. When it does well, it is certainly a first-class grape. The bunches are compact and medium-sized, the berries are large, and the flavour is very good. It does not hang very long after being ripe.

Gros Colman.—A fine-looking late grape, of commanding appearance. The bunches are very symmetrical, of medium size, very compact; the berries of the largest size, the colour jet-black, the bloom perfect. The constitution is strong, but the flavour is not fine till quite ripe, when it improves very much. Its principal merits are its keeping qualities, and fine appearance.

Muscat Hamburgh.—Where it succeeds, this is one of the grandest of all grapes, producing large bunches and large berries; I have grown and shown it upwards of 7 lb. weight. Its flavour is exquisite, particularly when it is allowed to hang till it begins to shrivel. It appears to do best on a warm, aërated, or newly-formed border of turf, which is much the same as an artificially aërated border, the air penetrating freely to every part of it, and consequently increasing its temperature. When the border gets old and solid, it necessarily becomes colder, and the Muscat Hamburgh under this condition does not thrive so well on its own roots. It does best grafted on the Black Hamburgh. This season the berries were one-third larger on the grafted plants; but for a few years after the borders were first formed, the bunches and berries were largest where grown on its own roots.

Mrs. Pince's Black Muscat.—This is another new grape which has a good many admirers. When well grown, the bunches are large, the berries above medium size, and when quite ripe a limited amount of Muscat flavour is observable. It has a robust constitution, hangs well, and will be useful as a late keeper. It has the defect of seldom colouring well, and takes a long time to ripen thoroughly, requiring fully as much heat as a Muscat of Alexandria to mature it—a serious drawback in these days of high-priced coal.

Muscat Champion.—A really useful variety, with stumpy bunches and large berries. The flavour is a fine strong Muscat; but its grizzly-brown colour is against it as regards appearance, and its constitution is not good.

Golden Champion.—A grape which has an extraordinary combination of good points, but, unfortunately, it has one serious defect—its liability to spot when ripening, arising from its thin, delicate skin. If it had not this fault, no grape would stand higher amongst cultivators, or be more extensively grown. It has a fine constitution, the bunches are above medium size, the berries of the largest size, the flesh melting, the flavour, when quite ripe, exquisite, distinct from, if not superior to that of every other grape. I almost escaped the spot this season, by keeping it in a drier atmosphere than usual during the period of ripening.

Duke of Buccleuch.—Equal in every respect to the Golden Champion, but without its fault. I have frequently had opportunities of seeing this fine grape, both at the Tweedside vineyard and elsewhere, and have no hesitation in placing it a long way in advance of any of the new grapes I have met with.

The qualities we want most, and which we must look out for carefully in our new seedling grapes are:—Sound constitution, vigorous growth, compact moderate-sized bunches, with large berries, melting flesh, fine flavour, and free setters—avoiding all varieties that are liable to crack when ripening. A full crop of good

fruit is what is wanted. Another grand desideratum is to secure kinds that will mature their fruit in as short a time as possible, enabling us to discard such varieties as Gros Guillaume, Mrs. Pince's Black Muscat, &c., which take nearly six months of the best part of the season thoroughly to ripen them, at an expense of nearly one-third more fuel and labour than suffices to mature some other varieties.—ARCHIBALD FOWLER, *Castle Kennedy, Stranraer.*

NOMENCLATURE OF GRAPES.

WOULD it not be possible, at our large fruit shows, to have a Committee formed for the purpose of correctly naming any fruit that might be found to be wrong? Supposing the judges were to put a Query upon any suspected dish, a small committee would soon determine the correctness or otherwise of the name adopted, and this would prevent the same variety of fruit being shown under so many different names, as was notably the case with the *Gros Guillaume* at the Manchester Show. If the sort usually shown under the name of *Barbarossa* is not that variety, but *Gros Guillaume*, then I think it ought to be corrected in every instance, and no judge should pass the same grape indifferently under the names of *Barbarossa* and *Gros Guillaume*. I think it is most desirable to get rid of all but one name for each variety.

New sorts are becoming so numerous, every year adding to their number, that a great responsibility rests upon those who certificate them. Many of the new ones are bought and grown for a year or two, and then make way for others, or for the old ones again. After seeing at the Manchester Show, the splendid examples of *Madresfield Court* Grape, I think there must be a great difference as to the adaptability of certain varieties to certain soils, as neither on its own roots nor grafted, does this variety do well with me, and this year, as in former years, it is going off soon after it is ripe.

Mrs. Pince's Muscat does very well and keeps well, but I think the best Black Muscat Grape is still to be found in the old *Black Muscat*, better known as *Muscat Hamburgh;* and here again, if this is nothing more than the old Black Muscat (as Sir Joseph Paxton many years ago asserted it was), would it not be better to return to the old name? This grape, when well grown, puts into the shade all the so-called Muscats as regards flavour, and grafted on the Muscat of Alexandria, it does remarkably well with me at Studley. I purpose growing it more extensively, and have recommended many of my friends who have not succeeded with it, to give it another trial on this stock. To all who wish for a really first-class grape, I can heartily recommend it.

What a magnificent-looking grape is *Gros Colman!* The berries are truly like large Orleans Plums. I had a gentleman from London through the vineries to-day (October 9), when we compared this variety with the *Black Hamburgh*. At present it will not do to eat, but at the beginning of the year, when the Hamburghs are over, it will be acceptable. Though a thin-skinned grape, it appears to be a good keeper. Strange to say, the wasps have eaten more of this variety than of the Muscats in the same house—I had given them credit for better judgment.

I am pleased to find in the new grape, *Duke of Buccleuch*, a vigorous grower. The small vine I received in May has made a growth of 12 ft. or 13 ft. since I got it, and is very strong; this has not been usually the case with new vines bought by me. It appears very nearly allied to the Golden Champion, but of better constitution, though I must say the latter grape is improving every year with me, and will pay for skill in growing. *Royal Ascot* is a beautiful-berried grape, and one of good flavour; but the bunches have a dumpty appearance, and I mean to graft it with Black Muscat next year, as it is a strong grower. Of the more recent introductions I am not in a position to speak, but hope to do so hereafter, as though I may be often disappointed in them, they afford one a great deal of pleasure in testing their merits.—JOHN CLARK, *Studley Royal*.

ROBINIA HISPIDA, OR ROSE ACACIA.

THIS very pretty plant, commonly called Rose Acacia, is a deciduous shrub of small stature; the young branches and the leaf-stalks are thickly clothed with bristly hairs, whence the name of *hispida;* the leaves are pinnate, with oblong or oval entire leaflets, and the flowers are of a pretty rosy-pink colour. It is said to be a native of the pine woods of Carolina, in North America, and the accompanying figure (1-6th nat. size), from *Hemsley's Handbook of Hardy Trees*, &c., gives a very good idea of its general appearance.

The origin of this plant was not long since discussed at some length in the *Revue Horticole*, by M. Carrière, who came to the conclusion that, dissimilar as is its aspect, it was a variety of the common Robinia or Locust-tree. No one, he says, knows whence it comes. After rejecting the hypothesis that it was a hybrid, or a variety of *R. viscosa*, he proceeded to examine two other hypotheses—whether it originated in a case of dimorphism of the common Robinia, or whether it was simply a form of that plant; and as neither proposition could be proved, he added, we must confine ourselves to analogies.

In reference to the question of dimorphism, M. Carrière observed that we have some quite analogous examples—plants with white flowers producing deep rose and even red ones, or plants with red flowers producing white ones. Thus, *Spiræa sorbifolia* has been seen to produce, on the same trunk, side by side, branches with red flowers, and others with white flowers, which is the normal colour; while from a yellow-flowered *Canna* a bud with red flowers has issued; and the Four-seasons Rose, whose flowers are normally of a fine rose-colour, has produced the four-season white Moss Rose, called Rose de Thionville. Similar changes occur amongst fruits. Thus, on a red-fruited Gooseberry, has been seen a branch bearing some quite white; on a Cherry-tree, with fruits almost black, has been noticed branches bearing white or flesh-coloured fruits. When it is added that very often the appearance of the plant—that is to say, the leaves, habit, or vigour, &c., of these dimorphisms—differs from that of the plants on which they are produced, it will be evident, he argues, that it is not impossible that the *Robinia hispida* may be the result of dimorphism. In the Rose de Thionville, for example, independently of the colour, which differs entirely, we find in the mossy hairs of the branches of the peduncle and of the calyx, quite the analogue of the hispid hairs on the branches of the *R. hispida*. Notwithstanding this, says M. Carrière, we do not hesitate to believe that *R. hispida* issued from seed of the common Robinia, and that it is very probably a variety which originally grew up without being remarked, as such cases still happen frequently.

The fact of the absolute sterility of *R. hispida* presents no obstacle to this conclusion, for it seems proper to a considerable quantity of known plants, and *Robinia Pseud-Acacia* itself presents numerous examples of it. For instance, there are of Non-flowering Varieties:—*R. dissecta, umbraculifera, tortuosa, bullata, angulata, glaucescens.* Of varieties flowering very little, rarely giving seed:—*R. Bessoniana, monstrosa, coluteoides, pyramidata, crispa, tortuosa major.* Of varieties flowering occasionally, often freely, yet giving few seeds, and sometimes none:—*R. Decaisneana, viscosa, monophylla, sophoræfolia, microphylla,* and *bella rosea.*—T. MOORE.

STRAWBERRIES IN AUTUMN.

WE are just now picking some very good fruit of Strawberries out-of-doors, from plants that were forced in March in pots, and planted out on a warm sunny border in June. The variety is the *Prince of Wales*, an old one, but nevertheless a good forcer, and also a good out-of-door cropper. After flowering we placed over each plant a bell-glass or French *cloche*, and they are swelling off some very fine fruit under them; and had we more glasses, more might be got. Without the assistance of the bell-glass none of the fruit would have swollen to maturity, and hence I find that no protection is so convenient and perfect as a good bell-glass. The *Keens' Seedling*, too, often throws up trusses of flowers and fruit, but not in such abundance as the *Prince of Wales.* Every plant has from one to three trusses of flowers, and each truss is swelling off one

or two fruits—few, it is true, but at this season very valuable and rare, and, as may be supposed, highly appreciated by our family and visitors. Instead of throwing away forced plants, as is generally done, we always make new plantations; and in this way we benefit by getting a full crop of strawberries the year following, besides the chance of a gathering of fruit in autumn, thanks to the French *cloche* for its valuable assistance. No doubt this strawberry has the hautbois blood in it, and hence its prolific tendency to fruit.—H. KNIGHT, *Floors, Kelso.*

NERTERA DEPRESSA.

IN the Exhibition House at the recent Old Trafford display of fruit, there was to be seen a small specimen of *Nertera depressa*, exhibited by Mr. Stansfield, of Todmorden. It occupied a 4-in. pot, the surface of which was literally covered by its bright tawny-orange berries. It is by far the smallest berry-bearing plant that I have ever seen; even the Cranberry looks coarse and big by its side. It is a hardy plant from the Straits of Magalhaens', its whole height being less than half an inch; it bears green flowers, which require to be looked for in daylight with the help of a lens, but the berries are as large as the old Charlton Peas.

This is the stand-point where small fruits begin—here is prostration and fitness to live under the tempest. I have seen it indoors, growing freely, and as it spreads, fixing itself firmly to the earth by pushing out roots after the manner of Strawberry-runners; but its indoor-life loses almost all its charms, for the berries do not seem to set in a warm place, although the plant likes comfortable quarters. I was shown a dozen plants got by dividing a single specimen in a 4-in. pot, and this I was told cost only a shilling. There will be plenty of carpet work in store for this gem of an 'Alpine' when it comes to be better known, for it is the veriest bantam among berry-bushes; and whatever fruits we may term large, this *Nertera depressa* will assuredly be reckoned the smallest of the small. —ALEX. FORSYTH.

GLAZING VINERIES.

SOME short time back I noticed in a contemporary a short note from your able correspondent, Mr. Douglas, on this all-important question, and I have been looking weekly, but in vain, in the hope of seeing it discussed on its merits. I know of nothing that puts me out of temper so soon as to go into any of our Vineries and see a scalded leaf; but this is not all. It is well known that scalded leaves mean bad grapes, while if the foliage is good, the chances are that the grapes will be good. We are daily hearing that Mr. So-and-So's Vines are all scalded, and in new houses, too. Surely this must be vexing in the extreme, not only to the person in charge, but also to his employer. I may perhaps be allowed, as an outsider, to state my experience in the matter, and will try to do so as briefly as possible.

I have here under my charge six large Vineries, averaging 70 ft. in length, in three ranges. The first of these has been built 50 years, and from being kept in good repair, they are not now to be grumbled at. The size of the squares of glass is 8 in. by 7 in., so that there is ample ventilation all over the roof, and herein, according to my way of thinking, lies the secret of success, for during the past five years, I do not remember having in them a single scalded leaf. These houses contain Black Hamburghs principally.

The next range is used for pot Grapes and Muscats, but is glazed differently. In the pot vinery the squares are giants, being 27 in. by 21 in., and the Vines always burnt or scalded badly until last year, when I overheard Mr. D. T. Fish telling a friend that the best remedy against scalds, was to syringe the surface of the roof lightly over with whitening and water, which I put into practice, and now thank that able horticulturist for such a valuable recipe. In the Muscat house the squares are 16 in. by 9 in., and here the leaves always scalded until syringed as stated above. Both these houses are glazed with British sheet-glass, and, I believe, with 21-oz. glass.

The next and last range is certainly the best. The squares are 24 in. by 10 in. One of them has a light ribbed glass which succeeds perfectly. In the other the ribs are more numerous, but it is not so good in many ways, as it is apt, unless one is very patient, to crack by the shaking in giving air; but for this, it answers well, and a scalded leaf is more the exception than the rule.

Now, I draw my conclusions from five years' experience here, that small squares of glass are the best, and if I had any quantity of glass to put up, 8 in. by 6 in. or 7 in. would be the size for me. However, I invite discussion on the subject, and should like to hear how Grapes behave under rough plate-glass. Perhaps Mr. W. P. Ayres would favour us with a line on this interesting subject.—R. GILBERT, *Burghley, Stamford.*

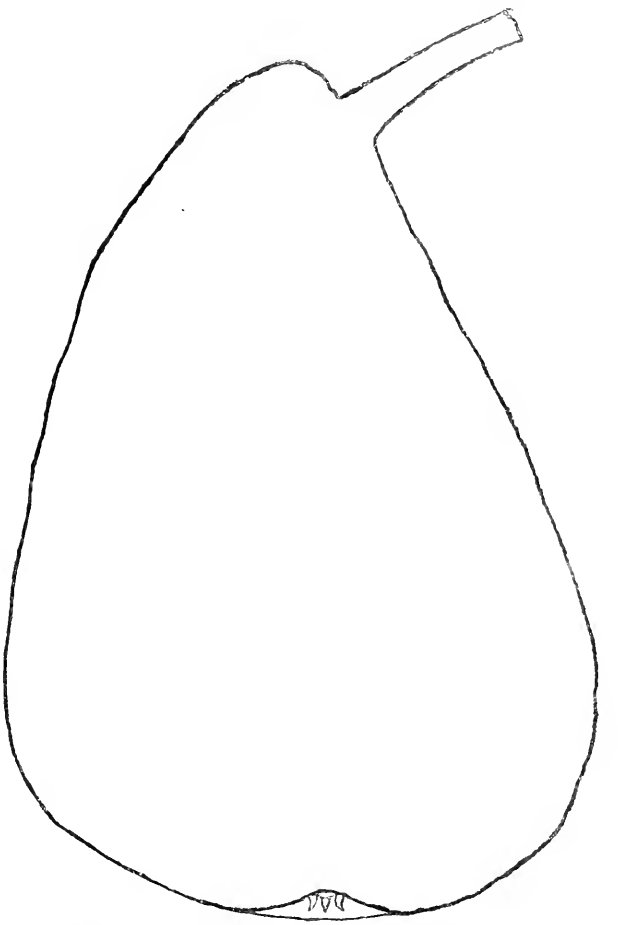
THE HEDYCHIUM, OR GARLAND FLOWER.

ALMOST of the species of this delightful genus are exceedingly beautiful, and richly deserve a place in every collection of plants. Being natives of the East Indies, they require a stove temperature, but in other respects they are of the simplest culture. They grow freely in a light, rich compost of turfy loam, rotten dung, and sand. During the growing season, the plants should be kept well supplied with water. In the autumn, after they have done flowering, they may be placed anywhere at the back of the stove, and kept rather dry. When the stems become withered, they should be cut off to within an inch or two of the base; the plants should afterwards have little or no water during the winter months, but early in March they should be examined, those that require it divided and potted, and those that do not require dividing should also be potted, removing from them as much of the old compost as possible, so as to give them a quantity of fresh soil. When potted, if placed in a favourable place in the stove, the shoots will soon begin to push freely and finely, when too much

water can hardly be given. The flowers are delightfully fragrant, and render the atmosphere of the house exceedingly pleasant and inviting.—M. Saul, *Stourton.*

THE DURANDEAU PEAR.

THIS fine autumn Pear bears the synonym of *De Tongres.* Its fruit are large obtusely-pyriform, and of tolerably regular outline. In the smaller specimens it tapers to the stalk, like the Beurré Bosc, whilst in the larger ones the stalk is inserted a little on one side. The skin is of a warm cinnamon-russet throughout, with numerous grey dots, exactly resembling Beurré



Bosc, but having a flesh of bright crimson on the exposed side. The skin is smooth and shining on the surface, but very rough and uneven underneath. Eye small, open, set in a shallow cavity. Stalk, about an inch long. Flesh white, rather coarse and granular, but melting, juicy, and of a most agreeable, rich acid flavour, very pleasant to the palate.

A truly noble and handsome Pear, well worthy of cultivation. Ripe in October. The specimen figured is from the market grounds of Mr. F. Dancer, of Chiswick, who speaks of it in high terms, as a good standard fruit succeeding well as a pyramid on the quince.—A. F. BARRON.

DENDROBIUM CHRYSOTIS.

IN the volume of the FLORIST AND POMOLOGIST for 1871 is a coloured plate of this Dendrobe. But the short notice of the plant therein contained, is more an account of its introduction, and a description of the plant, than an article on culture, except that we are told "it requires plenty of heat."

Having grown and flowered it from imported plants, I am now enabled to give your readers a few hints on its culture. It succeeds well in an ordinary plant stove, where the temperature is seldom below 60°, though if it falls to 55° as a minimum in winter, there will be no harm. I have grown it in a basket suspended from the roof, and also in a pot, and it does equally well either way. It is of very free growth, as much so as the old *D. nobile*, and should be grown as extensively as that fine old species. It is faithfully portrayed in the FLORIST, and the description is faithful. The flowers on the plate are 3 in. across; a correspondent of a contemporary, describing the flowers on the fine plant at Manley Hall, said they were 2 in. across; we had flowers 4¼ in. across. The colour is a rich golden yellow, with two deep maroon blotches at the base of the lower petal or lip. Pot it in peat and sphagnum, with some pot-shreds intermixed, and water freely when the plant is growing.—J. DOUGLAS, *Loxford Hall.*

THE APPLE: ITS CULTURE & VARIETIES.—CHAP. V.

THE Espalier may be trained horizontally either on a trellis of wood or a strained wire fencing. The latter, being very durable, and at the same time light and neat in appearance, is greatly to be preferred where expense is not taken into consideration; and if adopted, the principal care required is to see that the wires are equidistant, say six wires in a standard of 5 ft. 6 in., which would allow the lowest wire to be placed at 1 ft. from the ground. The trellis should be of sufficient strength that, supposing the trees to be planted on each side of a walk, a light archway might be thrown over, and the trees trained on until they met overhead, affording an agreeable shade in the heat of summer, besides giving more fruit-bearing space.

If a trellis of wood be adopted—and for an amateur this is probably the most easily attained method, and comparatively cheaper, because by the time a good substantial wooden trellis has decayed, the horizontal branches ought to be able to support themselves with only a few upright stakes at the extremities—the principal care must be bestowed upon the standards, which should undergo a course of preparation to increase their durability. We will suppose them to be driven into the ground so as to stand 5 ft. 6 in. above the surface; at least 20 in. should be slightly charred by being held in the flame of burning wood, and afterwards

painted over with gas tar, and if possible, left to dry before being driven into the ground; this implies a length for the standards of 7 ft. 2 in. If the ground is very light and deep a greater length is desirable; if hard and retentive, it will quite suffice for many years. These standards may be placed at 6 ft. apart, and the horizontal bars nailed on at the distances above recommended. The best size for the bars is 1¼ in. wide and half an inch thick when planed down to size. They should be well painted, and the least objectionable colour is a neutral tint or grey; staring colours, as chocolate or green, offend the eye very much. Cordons may be trained on the same principle with short standards and a single bar, but are best trained to a single wire, strained at about 1 ft. above the surface or edge of the walks.

The after-management of all the different methods of training herein treated of, will be practically the same, varying only in degree according to the strength of the trees, and it will consist of summer pinching-back, and winter pruning. The former will require to be regulated by the strength and vigour of the trees, as some will require comparatively little, others constant attention. Weak-growing varieties should be encouraged to make growth by mulchings, and the stopping process must not be carried out too severely, being confined principally to such shoots as develop an undue amount of growth in proportion to the rest of the tree. Strong and vigorous-growing trees, on the contrary, must be more severely handled, and in addition to the root-pruning before treated of, the root action must be influenced by a constant removal of all superfluous growth, or pinching-back, as it is called. This is an operation simple enough to the initiated, but perhaps a few remarks concerning it may be useful to the amateur. The first time of performing this operation during each season will be the most important, because upon its careful performance will depend the formation of future fruit-buds. The branches should be allowed to make a tolerably free growth before the restrictive system is commenced, that is, the shoots should not be stopped until there can be from four to six perfectly formed leaves left at the base of the shoot, the topmost bud of which will most likely break again; but the lower buds ought either to form fruit-bearing buds at once, or if not, to be so checked as to form the nucleus of future fruit-bearing wood.

It will very soon be obvious to the intelligent operator that the shoots cannot all be pinched back at the same time, as they will be in different stages of growth. It will be well, therefore, to commence with the strongest, and to follow the process up as the later growth advances. All the after-growth which is thrown out after the stopping process may be pinched back in any way the operator may choose, as it will mostly have to be removed at the winter pruning.

This winter pruning is another important operation, which, however, will be principally confined to the removal of all immature autumn growth, and the preservation of the balance of the tree, by thinning out all crowded branches, so as to let the light and air circulate freely amongst them. Trees which are trained as bushes especially require to be tied outwards, and so thinned out inside that

they should assume in some measure the form of a basin—the centre being kept well open; by which means very fine fruit may be gathered from the inside as well as outside branches. Where there is plenty of room this is decidedly one of the best forms in which to train dwarf trees. The Pyramids, however, take less surface room, and as they develop upwards as well as outwardly there can be a greater weight of fruit taken from them on a given space. In pruning Pyramids in winter, one of the principal points to be observed is to see that the tree is as far as possible equally balanced on all sides, so as to furnish a handsome specimen. The amateur, therefore, may sometimes find it useful to retain a portion of the late growth to fill up unsightly gaps; but it is a matter of choice, because, as a rule, all immature growths should at the winter pruning be cut back to the solid fruit-bearing wood. The only exception is that named above, where symmetry of form takes precedence of utility in productiveness.

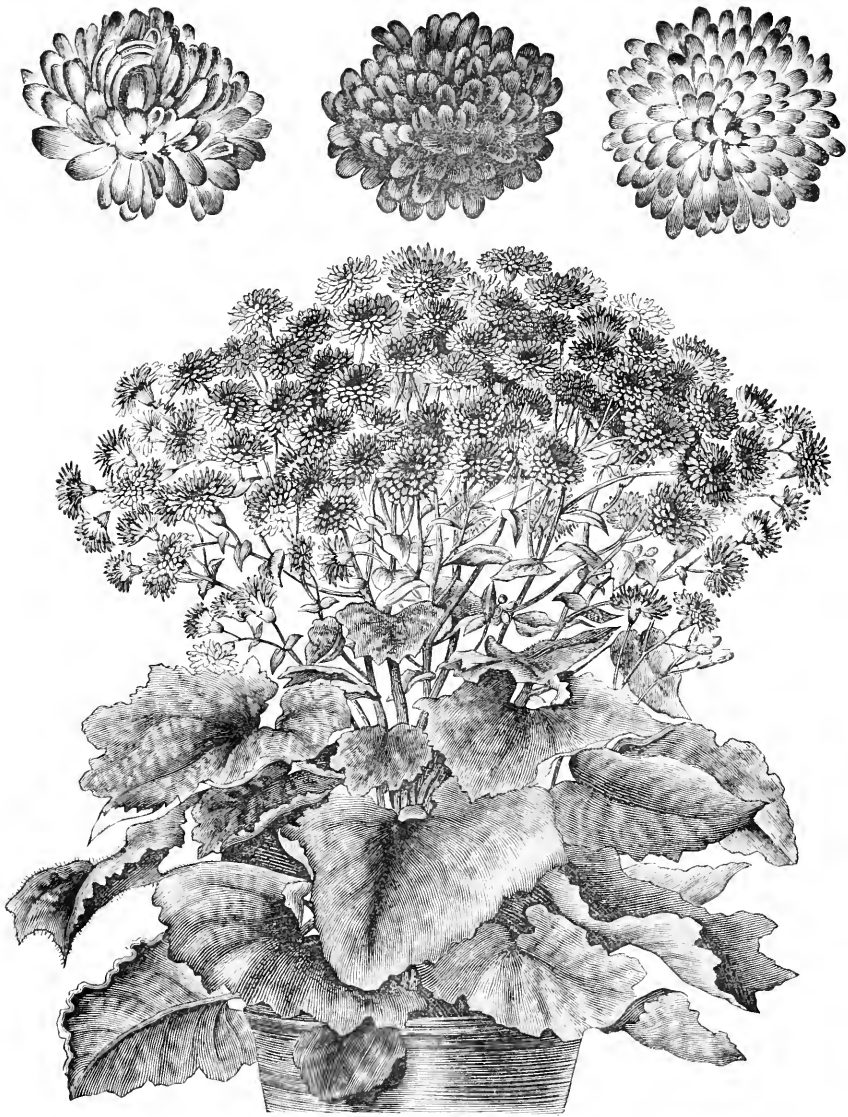
The summer pinching of Espaliers and Cordons, though not varying in principle from the foregoing, does so slightly in application. The Espaliers, being confined to a certain number of shoots diverging horizontally from the centre stem, and increasing only by the separate elongation of each shoot, are prohibited from developing side branches like Pyramids or Bushes. The object, therefore, to be kept in view is to induce as much as possible the formation of fruit-bearing spurs as near to the main shoot as possible along its whole length; and this, in connection with root-pruning, must be attained by closer and more frequent stopping in summer, and a closer cutting-in at the winter pruning.—JOHN COX, *Redleaf.*

CHOICE NEW CARNATIONS.

FOR many years past new varieties of the Carnation have been exceedingly rare, very few having been distributed. Last year I had the pleasure of introducing to the readers of the FLORIST a list of the finest lot of new Picotees ever offered, all of which have proved themselves, during the last season, quite equal to what they were represented to be. Among the Carnations of which I now purpose giving a list, will be found some grand acquisitions, particularly among the Scarlet Bizarres. Their merits have been all well tested, and they have been very successfully exhibited, most of them having received certificates. Several of them were raised by that veteran and enthusiastic florist Mr. Hextall, of Ashby de la Zouch, to whom it must have been a source of great gratification to have been so fortunate as to raise such remarkable novelties among his special favourite flowers.

AJAX (*Hextall*), Purple Flake.—A fine large full flower, smooth and well marked with very bright purple, quite distinct, and of good robust habit. It was awarded a Certificate of Merit at Leicester; extra fine.

CAMPANINI (*Turner*), Scarlet Bizarre.—A large fine flower, with good smooth petals; colours very bright, and beautifully marked. It was awarded a First-class Certificate at the Royal Horticultural Society; extra fine.



New Double-flowered Cineraria.

Guardsman *(Turner)*, Scarlet Bizarre.—A fine large full flower, very bright and beautifully marked; quite distinct, and particularly attractive. The largest in its class; extra fine.

Mars *(Hextall)*, Scarlet Bizarre.—A grand flower, very large and moderately full, fine broad smooth petal, very bright colours, and beautiful markings; much in the style of Admiral Curzon, but larger, and of a more robust habit. It was awarded a First-class Certificate at Leicester; extra fine.

Mercury *(Hextall)*, Scarlet Bizarre—A fine large flower, with good smooth petals, and very fairly marked; a good useful variety.

Saturn *(Hextall)*, Scarlet Bizarre—A fine flower, very bright and well marked, large and full without confusion. It was awarded a Certificate of Merit at Leicester; extra fine.

Superb *(Ingram)*, Scarlet Flake.—Fine smooth petals, very bright and well marked; large, full, and very fine. It was awarded a First-class Certificate at Royal Horticultural Society; extra fine.—John Ball, *Slough*.

NEW DOUBLE-FLOWERED CINERARIAS.

WITH AN ILLUSTRATION.

DOUBLE-FLOWERED *Cinerarias* are not absolute novelties, for we remember having seen exhibited in London, in 1861, by Mr. Kendall, of Stoke Newington, a variety called *C. rosea plena*, to which a commendation was then awarded, and which was a very pretty, compact-growing, double-flowered variety, with the flower-heads of a magenta-rose. Whether that was lost or not, or did not perpetuate itself, we do not know, but it was not seen again in public; nor has a double-flowered Cineraria appeared since that time, so far as we are aware, till this year, when cut blooms of several varieties were sent to us, and were such as to lead us to hope for the permanent establishment of the double-flowered Cineraria as a valuable decorative plant.

We have to thank Messrs. Haage and Schmidt, of Erfurt, not only for the opportunity of publishing the accompanying figure of this novelty, but also for the pleasure of inspecting, during the past summer, the blooms above referred to, which were of the greatest possible interest and beauty, and were perfectly and evenly double, being entirely made up of ligulate florets, as in the case of the double-flowered Jacobæa, *Senecio elegans*, which they very much resembled. There were representatives of all the modifications of colour usually found amongst Cinerarias, namely, crimsons and magentas in various shades, purples both dark and light, as well as flowers tipped with several different tints of violet and magenta. And there were size and symmetry, as the larger detached blooms, represented on the plate of the natural size, fully testify. The habit of the plant, as represented by the principal figure, is exceedingly good, and altogether we look upon these novelties as decided acquisitions from a decorative point of view, even though, as may be possible, the double-flowered character may not yet be thoroughly fixed in the offspring.—T. Moore.

MYOSOTIS DISSITIFLORA.

MY object is to commend this beautiful spring-blooming Forget-me-not, as being particularly well adapted for flowering in pots in February or March in a greenhouse. For this purpose I do not recommend the use of seedlings, but the divided portions of the plants that have bloomed the previous spring, because the growth is so much the more compact, and also because the blossoms will be produced earlier in the season. I grow some of it every year, and as it is only under most favourable circumstances that the old plants of this Forget-me-not will live over the winter in the open air, there is no valid reason why the plants should not be employed for pot-culture. My first batch, made of the side-shoots picked off from the plants, are quite strong, the 3-in. pots being filled with roots. The largest plants will be shifted into 5-in. pots; the smaller will flower in the 3-in. pots in which they are now growing. I hope to have some of them in flower soon after Christmas, and that is just the time when blue flowers are most acceptable. And such a hue of blue too! It is a radiantly beautiful blue, and there are such dense masses of colour to show off the surprising loveliness of its charms. In a light, fairly rich soil, this Forget-me-not grows well, and it only requires protection from frost.

Sometimes the plants show the accumulation of green-fly, just as our Pelargoniums, Calceolarias, Cinerarias, &c., will at this season of the year. I cannot smoke my conservatory, because it opens into the sitting-room, and the strong smell of the fumigating material gets through into the room, and pervades the house; but I keep down green-fly by the use of Frettingham's Liquid Compound, distributed in the form of a fine spray by means of a very simple apparatus sent out with the preparation; or by an application of Fowler's Gardener's Insecticide, both of which are real boons to the amateur horticulturist, and accomplish their work effectually.—R. DEAN, *Ealing*.

ON RAISING THE CROCUS FROM SEEDS.

A GARDENER remarked to me a short time ago, of these beautiful little harbingers of spring, that "they were grovelling too near the dirt for his notice." They have not been so to me, and for some years I have taken an especial interest in their cultivation, and found much pleasure in raising them from seed, the results each year proving more gratifying than in the preceding. I flatter myself that I have now one of the choicest collections of this lovely little gem in England, having over one hundred varieties, and another batch ready to bloom next season. Amongst them are many improved kinds, with shorter cups than in the old varieties. Then, the markings of some are of remarkable artistic beauty; while others are very delicately lined with hair-strokes, some are pure whites, some are very fine blues, and some are lavenders, the latter colour being also in some cases tipped with white. In fact I cannot attempt to describe the variations of colour.

I feel so highly gratified with my success, that I am induced to lay my treatment—common as it is—before your readers, trusting that those particularly interested in apiarian pursuits may at least be induced to make some effort to improve and cultivate them, as they are so very attractive to those indefatigable workers, the bees, and attracted so much attention at our late International Exhibition. I have often sat and watched with intense delight their unwearied labours, as they seemed to vie with each other which should carry the most nectar home to the hive. It is amusing to see four in one cup at one time.

The system of raising Crocuses from seed of course requires a little patience, and I do not suppose that even Job, with his stock of it, ever tried it in that way. There is, however, little care needed, as they come of such a hardy race. I find the seed is best sown as soon as possible after it is ripe; by that system a season is saved, for if delayed long, the seed lies dormant until the second spring following. The only care I bestow is to prepare a narrow border alongside of a bed not intended to be disturbed,—say, about 3 in. or 4 in. wide; to sow the seed moderately thickly, and cover about an inch with sandy soil. On their first appearance, they show only a fine tubular foliage; in the second season, they assume the well-known foliage of the parent, but small; while in the third year it is the same, but increased in size. As soon as the foliage assumes signs of decay the third season, it is best to lift them, and replant them at once in some good rich soil, about 2 in. apart. If they have been well grown, they will produce a mass of bloom the spring following, when the best can be marked with labels, and any inferior ones lifted out.

I do not recommend the raising of Crocuses from seed from a financial point of view, as I never thought it a likely speculation to make a fortune by. I, for one, however, take a lively interest in endeavouring to do anything calculated to leave the world a little better than I found it. To any one, then, who has means at command, and who takes a delight in such things, the experiment may be commended as inexpensive, for by procuring a few bulbs of each of such sorts as *Sir Walter Scott*, *Argus*, *Princess Alexandra*, *Caroline Chisholm*, *Othello*, *Mary Stuart*, and *La Majestueuse*, he will be furnished at once. Or, to any one wishing to try at once, I will furnish choice seed on receipt of a stamped addressed envelope. The yellow varieties do not produce seed, though it is as well to grow a few amongst the others; but so far, I have obtained nothing new in yellows.—John Walker, *Winton, Manchester*.

ON PROPAGATING THE ALYSSUM.

THIS being one of the things that cannot be dispensed with in the flower garden, it may be useful to show that in cases where a large quantity is required, and, as is too often the case, there is not much accommodation to winter all properly, it may be kept with advantage in a cooler state than is sometimes done, the result being that it will possess greater vigour. Last autumn, having some cuttings in both hot and cold frames, neither of them doing to my

satisfaction, I had, about the beginning of October, a quantity of 8-in. pots properly drained, and filled with leaf-mould and sand, sifted fine, and well mixed together; these were filled with cuttings, a good watering was given through a fine rose, and they were placed behind a north wall, where they stood until it was getting unsafe to leave them out longer. Before being taken in, they had, however, stood several degrees of frost, though when the weather was clear and doubtful a mat had been thrown over them. When taken under cover, there was no coddling, but they were placed where they got plenty of air and light, and frost merely kept out of the house. By February most of them were found to be rooted, and by the middle of March a nice batch of cuttings was got off them. After this they should be allowed to break a little, and then be potted off singly or into boxes, the latter being the most economical, as more plants can be got into a given space. A little close warm moist heat would benefit them at this stage, but only for about a fortnight, when they should be transferred to a cold frame, about the beginning of April, keeping them close and shaded for a few days if bright, and if very cold covering the frame for a few nights, so as not to let them have too sudden a check.

We have again this autumn put a quantity into boxes, which have stood behind a north wall, and although all our flower beds have to be cleared, owing to the plants being cut by frost, these cuttings, only newly put in, are quite fresh, never having had any covering. We have filled an old wooden frame with cuttings, to see if we can keep them over winter, as we think this is one of those plants that might stand hardier treatment than it generally receives.—T. H. A.

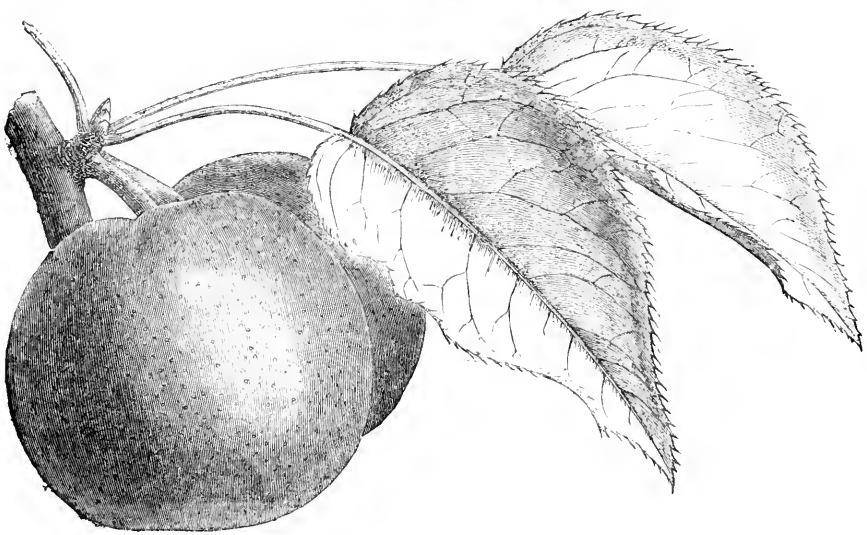
LA GROSSE SUCRÉE STRAWBERRY.

THIS excellent variety is, I find, but little known. I am therefore induced to bring it under public notice, feeling assured, after careful observation, that it will merit a place in every collection.

I received it some years ago, with many other French and Belgian varieties, from M. Ferdinand Gloede, the celebrated French Strawberry-grower, then of Sablons; but whether or not it is a seedling of that gentleman's raising, I cannot say. [Messrs. Vilmorin attribute it to M. De Jonghe.] My object is principally to recommend it as a forcing variety. As an early forcer it is certain to throw up good strong flower-spikes, and it sets its fruit freely in a higher temperature than is usually given to forced Strawberries at that stage of their growth. Few plants will be found to go *blind*—it may be, one or two in a hundred—and this is a great point in *early* forcing. Again, there is a peculiarity in this kind that renders one set of plants equal to two of any other kind, for when the first crop of fruit is nearly matured, the plant throws up a second batch of flower-spikes, equally strong, and capable of producing a crop as good as the first, and so it will continue on through the forcing season. Last year we gathered fine fruit in May, from the same plants that were gathered from in the beginning of April.

The plant is of a strong and healthy habit, and the foliage of a stiff and glossy texture, which enables it to withstand the attacks of spider, often so troublesome on forced strawberries. The fruit is large, of a lively red colour; it is solid, and will stand packing and carriage, and will also keep fresh for several days after being gathered. As an early variety for out-door culture, I consider it superior to *Keens' Seedling* or *Vicomtesse Héricart de Thury*, as it is equally early, and the fruit is larger, and of better quality. I think it a valuable variety, and deserving the notice of every strawberry cultivator.

A propos of forcing Strawberries, I may here mention the *Vicomtesse Héricart de Thury*, which is a good early forcer, bears heavy crops, but though early and useful, is rather inferior in flavour. The following varieties for succession will be found among the best:—*President*, *Sir J. Paxton*, *Mr. Radcliffe*, *Prince Arthur* (Ingram's), *Dr. Hogg*, and *Kimberley*, which latter appears but little known. I saw it growing last spring in a nobleman's garden in Sussex, bearing heavy crops of fine fruit, and it was apparently much prized in that locality.—J. Powell, *Royal Gardens*, *Frogmore*.



PYRUS SIMONII.

THIS novel species of *Pyrus* was sent from China to the Jardin du Muséum, at Paris, by M. Eug. Simon, some ten years since, along with several others which have not yet fruited. It has now been named by M. Carrière, who describes it as a vigorous tree, with stout erect shoots, having smooth olive-green bark, marked with elongated lenticels, and leaves, with a shortly cordiform limb, often oblique, prolonged into a cuspidate point, deeply toothed, coriaceous, and of a shining green above. The flowers are numerous, in compact corymbs. The fruits, represented in the accompanying woodcut from the *Revue*

Horticole, are subspherical, depressed, about two inches in diameter; pale green, becoming yellow at maturity; the flesh is whitish, rather melting, with abundant vinous juice, and a peculiar aromatic taste, recalling that of the Coing or of the Pomme de Reinette—a taste not met with in our European pears.

The fruits of *P. Simonii*, which ripen in September, blet quickly; they nevertheless preserve their juice as well as their peculiar flavour, which suggests that it may be practicable to manufacture from them a drink of a special nature. —T. M.

CLOTH OF GOLD PANSY.

THIS is one of the best recent introductions among the bedding Pansies, being of a rich golden-yellow, the flowers large and of good form, and the plant an abundant bloomer, as well as a strong grower. Another great recommendation is that it is very fragrant. It stands in bloom well through the summer, and makes beautiful edgings, as it grows very evenly and compactly, when cuttings are taken in autumn, for the following season. Like all others, it requires liberal treatment in the way of manuring the ground, and if this has not been done previously it should be done at planting time, by stretching a line six inches further back than the line proper for the plants, and with a spade taking out the old soil about 4 in. deep, and filling up with some good fresh loam, mixed with old rotten manure, all having been well mixed together previously. If the weather is at all fine, and the arrangements (as regards colours) are made for the summer's planting, let them be put into their summer quarters some time in March. This is a variety that will become a general favourite.—T. H. A.

GROWTH OF THE CAMELLIA IN THE PEACH-HOUSE.

CASES do occur, indeed I may say very frequently, when the back wall of the peach-house remains unoccupied, owing, possibly, to the supposition that the shade produced by the peach-trees when trained over the roof materially interferes with the growth of any plants on the wall. Such an opinion, if entertained, is erroneous, as in the case of the *Camellia* the protection is very beneficial, since it will not grow satisfactorily if exposed to spring and summer sunshine, and the leaves scorch under a small amount of exposure.

About eighteen years ago I had our peach-houses planted in the manner indicated with early and late-growing varieties of Camellias, and they now keep up a large and constant supply of flowers from Christmas till the end of May—not a few stragglers here and there, but so profuse that we are able to gather large quantities two or three times a week for room decoration, for which they are found exceedingly useful. Moreover, we never require to cut from our pot plants.

It is a mistaken opinion with some persons that the *Camellia* can only be successfully grown in peat-soil, whereas it will grow more vigorously in silicious loam, of which our peach-tree borders have been made. But it will not thrive in

calcareous loam, even where lime is present to a very limited extent. This I once discovered after having much injured a collection of plants, to that extent, indeed, that a few of them never recovered. This I note as a caution, lest some persons may commit the same fatal mistake. Our plants have, many years ago, covered the entire wall-surface, rather more than eleven feet high, and are annually cut back, to keep them within proper limits.

The *Camellia* will not submit to hard forcing; gentle means must be used, or it will certainly drop its flower-buds. There are some varieties that will bear a little more heat than others, yet none will bear much without suffering some damage. Fire-heat should not exceed the temperature of the peach-house, which I have never found to inflict any injury. When early flowers are required, early kinds should be chosen, and kept constantly on the move, till finally put to rest, so that they may come into bloom early during winter or spring, without putting on any pressure.—ALEXANDER CRAMB, *Tortworth Court*.

GARDEN GOSSIP.

THOSE who feel disposed to adopt the extension system of Vine-growing, as it is termed, may be encouraged by the extraordinary progress made by a *Black Hamburg Vine*, in Kay's Nursery, at Finchley. This vine has been planted 17 years, and has now a stem measuring 18 inches in girth where it enters the long low house which is devoted to it, and which it has completely filled for some years past. The pit is span-roofed, with an unequal span, and the vine enters about the centre, and is carried across to the other side, following the slopes of the roof; five pairs of branches, three on the longer, two on the shorter side, are taken right and left to the end of the house, where they have long since been arrested for want of further space, so that the whole area from end to end is equally covered. This vine, in 1862, when but six years old, filled the house, which is some 89 ft. or 90 ft. in length, and 16 ft. or more in width; it then bore a prodigious crop of fruit for its age. In 1866, being then ten years old, it carried 300 bunches of from 2 lb. to 5 lb. weight each. In the present year, 1873, being now 17 years old, it has borne a remarkably heavy and most beautifully finished crop, which consisted of 500 bunches, yielding a total of over 7 cwt. of high-class grapes. No doubt the soil of that part of Middlesex is good, and favourable to Vine-growing, and that the roots have, of late years at least, been well cared for; but there was no special provision made for it at the time of planting, and in any case, the progress of the vine, and its annual produce, have been something extraordinary.

—— THE following notes on some of the *New Tea Roses*, as grown in pots under glass in a cold house, from the pen of a well-known rosarian, and recently published in the *Gardeners' Chronicle*, will doubtless be read with interest:—

Perle de Lyon: a splendid flower, colour deep yellow; large and well cropped; wood strong but short-jointed; A 1.—*Anna Ollivier:* one of the best; medium to large, long pointed bud; petals dark rose at base, shading off to white at edge; a fine novelty.—*Madame C. Kuster:* white outside, the centre petals light bright yellow, fair size, full, promising; a continuous bloomer.—*Madame Docteur Jutte:* rather small and with few petals; colour orange-buff strongly suffused with pink when just opening; very pretty, and very distinct in colour.—*Madame Armand:* long pointed bud, outside petals creamy-yellow, inside bright yellow; something like Amazon, but more like Niphetos in shape; may be described as a yellow Niphetos.—*Madame F. Janin:* small, colour fine orange-yellow, first-rate for buttonhole work.—*M. Bennett:* small, colour of early blooms pink, suffused with bright yellow; very pretty and distinct, but not large enough; first-rate for buttonholes; the later blooms came clear bright yellow—in fact, this Rose varies in colour in the same way as Christophle.—*Amazon:* long pointed bud, large, opens well; light yellow, deeper in centre; a fine new Rose.—*Belle Fleur d'Anjou:* bud bearing some resemblance to both President and Rubens;

promising.—*Madame Camille*: large creamy-white; inner petals faint blush, about midway in shape and colour between Rubens and Alba rosea.

—— COWAN'S *Compensating System of Heating* has lately occupied considerable attention, and the trials which have been made at Manchester, and since then at Hatfield where a very large apparatus has been fitted up, have led to a general impression in its favour. The "compensation" is found in the lime which is produced, the main feature of the system being the burning of lime in a kiln, over, or at the top of which, is fitted a hot-water boiler, which is heated by the act of burning the lime. According to Mr. Cowan's experience, the lime realises fully the cost of the fuel, or even more, so that the Hot-water Apparatus is literally heated for nothing. Even if the more extended trials of the system do not wholly justify this view of its merits, there seems no doubt it is capable of effecting a considerable saving on our present coal bills, which is a matter of no slight consequence to the future of gardening. We want, indeed, further observation and experience, especially as to how small a scale can be adopted with efficiency and profit; but the whole thing seems both feasible and promising, within certain limits.

—— A *Large Vine*, grown on the extension principle, is growing in the Gardens of the Viceregal Lodge, Dublin, and annually produces a very fine crop of good grapes. This vine occupies entirely a large half-span-roofed house, 70 ft. in length, by about 20 ft. in width, and has this year carried a very heavy crop of grapes, as well-coloured and finished as they could possibly be, the bunches all over the house being very even in size, and the berries of enormous dimensions—several which were measured being 3 in. in circumference. This vine, the *Gardeners' Record* tells us, was planted by Mr. Smith some seventeen years ago, and has never since failed to produce annually an excellent crop. Advocates of the extension system of Vine-growing have in this instance a good example to appeal to.

—— THE *Early Snowball Cauliflower* is highly spoken of as an early sort. Spring sowings, made at the same time with the Walcheren, came in fourteen days earlier; while from a sowing made June 26, capital heads of good size, solid, and as white as snow, were cut by the end of September, although the plants had to contend with drought and poor ground. If sown at midsummer, and put out to succeed some early crop, it is asserted that this variety will always yield good heads to cut at Michaelmas. Its quality when cooked is second to none.

—— AMONG Melons, *Gilbert's Burghley Park Green-fleshed* is strongly recommended by Mr. J. Smith, of Exton Park, who visited Burghley early in October, and saw dozens of this melon growing in the melon-house. It is a strong grower, a remarkably free setter, the fruit averaging 5 lb. each, of a bright golden-yellow colour, and slighly netted, the skin thin, and the flavour most exquisite. It was exhibited before the Fruit Committee of the Royal Horticultural Society, on June 18, and was awarded the highest honours, viz., a First-class Certificate. Mr. Gilbert is noted for melon-growing, and any one who has seen the melon-house at Burghley, when full of melons, will not soon forget the sight.

—— THE periodical *Lime-washing of Fruit Trees* is generally considered serviceable in keeping down the ravages of insects which find their home in the fissures of the bark, but the whitening of the stems has an unsightly appearance. It has been found, however, by experience, that the same beneficial effect results from the use of colourless lime-water, and which, when settled and become clear, can be poured off and used repeatedly, without affecting the appearance of the tree.

—— A VERY useful hint or "wrinkle" on *Growing Peas* was lately thrown out in the *Gardeners' Chronicle* by Mr. Monro:—The early Peas bloom from the ground up to 2½ ft. or 3 ft.; while the late sorts, Marrows, &c., grow tall, and for about 3 ft. from the ground do not bear a pod. To obviate this loss of space, Mr. Monro, when sowing his late Peas, such as British Queen, &c., sows in the same rows, some of the early sorts that grow about 3 ft. high; these early sorts come away first, catch hold of the stakes,

and support the others until they get hold of the same; the result being a beautiful crop of Peas quite three weeks before the tall sorts are ready to gather, thus giving a double crop off the same ground, and with the same sticks.

—— Amongst recent *Presentations*, we may mention one made to *Mr. W. Dodds*, gardener at Ashton Court, near Bristol, on the occasion of his leaving that situation. The Presentation, consisting of a silver biscuit-box, which, with the stand, was elaborately engraved and ornamented, bore the following inscription:—"Presented to Mr. William Dodds, by the workmen of Ashton Court Gardens, as a mark of their esteem and respect.—Sept. 25, 1873."

—— When young *Araucarias* have lost their leader, or have from any cause become disfigured, they may be made to form a new leader and assume their wonted symmetry, simply by cutting them down, when a fresh shoot will be at once formed. It is necessary, however, to cut close down to a whorl of branches, otherwise the leader may start from too high a point of the stem, and so an unsightly interval may be the result.

—— The *Spiræa venusta*, or Queen of the Prairie, thrives well in the light sandy peat of the Knap Hill Nursery, where we lately saw a large bed of sturdy plants in great perfection. It may well bear its name of "beautiful," for few of our herbaceous perennials are more comely, though it is now seldom met with in gardens. Its elegant pinnately-cut leaves form a pleasing base, from which in succession throughout the summer rise the flower-stems, having just the habit and aspect of our Queen of the Meadows, but with the flowers of a charming rosy-pink, clear and bright, though soft in hue.

—— We lately saw in the garden of Mr. Mackay, of Totteridge, plants of *Linnæa borealis*, growing with the utmost freedom and vigour under circumstances which were somewhat peculiar. It was planted in pots, and placed in a cold, moist, and rather shady greenhouse; the long trailing branches were trained upwards within a loose kind of trellis of sticks and matting, about a foot high, and were intended, when they had reached the top, to fall over, and assume a drooping character. Mr. Mackay finds the Linnæa to strike very freely from cuttings put in in the autumn months, and the plants thus raised appear to grow away with extraordinary vigour.

—— Besides the firms mentioned at p. 236, as having obtained Medals at the Vienna Exhibition, we may add that the Medal for Merit was awarded to Messrs. J. B. Brown and Co., for wire-netting exhibited by them.

—— The pretty plant, known as *Vittadinia triloba* in gardens, has recently been shown by Dr. Asa Gray to be not that plant at all, but the *Erigeron mucronatum* of De Candolle, a native of Mexico, Venezuela, &c.

GARDEN WORK FOR NOVEMBER.

FLOWERS.

FLOWERS out-of-doors are now reduced to a minimum; possibly a few late *Tritomas* may still be blooming away amid the wreck of fading annuals and bedding-plants. Among the former, few things stand autumnal rains and early frosts better than the common white Sweet Alyssum, which seems even whiter and sweeter than usual amid the fast-falling leaves. It is singular to note the difference in hardiness amongst some bedding plants at different seasons of the year. Take, for instance, the *Iresines*. Few plants are more easily injured by frosts in the early spring or summer; but in the autumn, they may be whitened over and over again by hoar frost quite with impunity. Even the two kinds differ in the power of enduring cold, almost as much as in

colour, *I. Lindeni* being considerably the hardiest. I have noticed the same difference among other plants, notably among Solanums and Castor-Oils. Let the frost but look at them at the end of May and beginning of June, and they perish; but in October they will bear several degrees without injury. A good deal of this difference may be put down to previous coddling in the spring, but hardly all of it. I suppose, like ourselves, the friction of the climate, like that of life, makes them thicker-skinned, and hence they feel the cold less. Every plant intended to be saved from the flower garden and border must be looked up at once. As a rule, October may generally be trusted not to kill half-hardy bedding or subtropical plants; but that trust must not be extended to November. The frosts that come on the back of cold November fogs are dangerous indeed. All such things as *Cannas*, *Ficus*, *Pelargoniums*, *Marvel of Peru*, *Dahlias*, *Echeverias*, and *Salvias*, roots or plants, should be at once stored in frost-proof places for the winter. It is also a good plan, where space can be found, to pot up a few dozen of the shrubby *Calceolarias* from the flower-beds or borders, lifting them with balls, plunging them in a mild bottom-heat of 55°, to force out fresh roots, which will be done in a week, and then placing them in the greenhouse or conservatory. If plants are chosen bursting into blossom, few things will prove more useful or ornamental at a season when we are scarce of flowers, especially of yellows.

The *Herbaceous borders* should be manured and dug over, reducing and regulating the root-growths as the process proceeds. In all mixed beds or borders great care should be taken to maintain a fair balance of space between the weak and the strong; the latter must be sharply reduced, and the former encouraged with a little extra food. Good things should also be multiplied as fast as possible; beware, however, of excessive division; few plants like their crowns cut into too many pieces, and covetousness in the garden, as elsewhere, like vaulting ambition, often o'erleaps itself, and falls on the other side. See that all dormant things, and all bulbs are re-marked or labelled. Finish planting bulbs of all kinds on beds and borders, and see to it that the mice and rats don't feast on *Crocuses* and *Tulips*. A few hardy annuals may be sown at once, or better still, transplanted out of the reserve ground. All spring flowers, as *Anemones*, *Myosotis*, *Daisies*, *Primulas*, *Violets*, &c., should be planted where they are intended to bloom. *Roses* should be planted this month. Make up all blanks in old beds and borders, and prepare new root-runs for new ones; a rich stiff soil in a sheltered place is the position for Roses; exposure above, and stagnant water at the roots, are their greatest enemies. Top-dress established Roses; there is nothing better than rich farmyard manure, and partially decomposed cow-dung and night-soil. The Rose is a gross feeder, and manufactures its divine odour from the most offensive of manures and the most pungent of sewage, Mr. Smee and his sewage-poison theory notwithstanding; and yet what *faire ladye* ever whiffed sewage from a rose, or died of a rose fever in aromatic pain?

Flowers in-doors can hardly be kept too quiet—I mean, of course, the permanent plants, as stove, greenhouse, or conservatory plants, orchids, &c. The sun's power has sunk to zero, and nature ought to rest, or stop growth. Excitement now, in the feeble light of November, means only injury. Thus let the plants rest this month and next, and then—well, then, heat and moisture need only be let loose upon them to loosen their arrested development, and let their growth go freely forward. But, of course, a special class of plants is wholly exempted from the resting regimen. The growing host, every year getting larger, of what are called winter-blooming and forcing-plants, must be got fairly under weigh, and pushed forward as instructed last month. And the first batch of *Lilacs*,

Rhododendrons, *Roses*, *Deutzias*, *Spiræas* (I like the old name), *Double-flowering Cherries*, *Almonds*, *Double Thorns* (especially the White and the New Scarlet), &c., must be got into heat. A temperature of from 55° to 60° suits all these and other plants of the sort well. A spring morning is the example to aim at. The flowers will respond more kindly and more readily to that than to a higher temperature, resembling the glare of a midsummer day. Batches of *Bulbs* must also be brought on in succession.

Plants stored in pots and frames should be kept rather dry, and exposed to as much air as possible consistent with freedom from frost, and cold autumnal rains. The latter are worse for many things than the former. The advice need hardly be given to keep on mowing as long as the grass continues to grow, and to sweep and roll grass and gravel as often as the labour at command will admit of. Cleanliness is the choicest flower to be found in the garden in winter, notwithstanding that the *Arbutus* and *Laurustinus* are doing their best to make us forget that flowers, afraid of the cold, have taken to glass quarters for the winter.—D. T. Fish.

FRUITS.

In-Doors.—*Pine-Apples:* Attend to the wants of the plants now swelling their fruit, by watering when necessary, keeping a moderately moist atmosphere, and maintaining a steady bottom-heat; the temperature at night should range about 70°, and from 80° to 85° by day. The plants for starting early next year should now be at rest; give a little air whenever the state of the weather permits, keep a tolerably dry atmosphere, and be careful the night temperature never falls below 60°. If the succession plants have a nice steady bottom-heat of about 80°, they will not require much attention at present, beyond keeping up a proper temperature, and giving air whenever the weather permits. *Vines:* Start the early house at once, if not already done. If the wood was properly matured, and the roots are in a healthy state, there will be no difficulty in inducing the buds to break freely and regularly; maintain a moist atmosphere, and a night temperature of about 50° until the buds begin to swell, when it should be raised to 55°; the day temperature should be 10° to 15° above the night temperature; keep the inside borders well watered with tepid water, and see that the outside borders have sufficient fermenting materials on them to cause a nice temperature. Prune all Vines from which the Grapes have been cut, and dress and prepare them for starting when required. All houses containing ripe Grapes should be kept cool and dry; look the bunches over frequently, and cut out all decaying berries. *Peaches and Nectarines:* The early house may be started any time this month. If the weather be mild, fire-heat will not be required for a week or two; stir the surface of the inside borders lightly with a fork, then give them a good soaking of liquid manure, and afterwards cover the surface with a dressing of half-rotten dung. The outside borders should have a slight covering of fermenting materials put on them. Syringe the trees daily, and keep a moderately moist atmosphere. Prune at once all trees in late houses, and take advantage of bad weather to dress them carefully with the mixture recommended last month; when dry, have all the shoots neatly tied to the trellises. Have the houses thoroughly cleaned, and see that the heating apparatus is in proper order, so that nothing may prevent their being started at the proper time. *Figs:* These should also be pruned, and then dressed with the mixture recommended for Peach-trees, and the shoots tied-in in bad weather. Give abundance of air in mild weather, but take care not on any account to let the wood get frozen. *Cherries:* These should be placed under glass to protect from frost. *Strawberries:* They will now have done growing, and should at once be placed in their winter quarters.

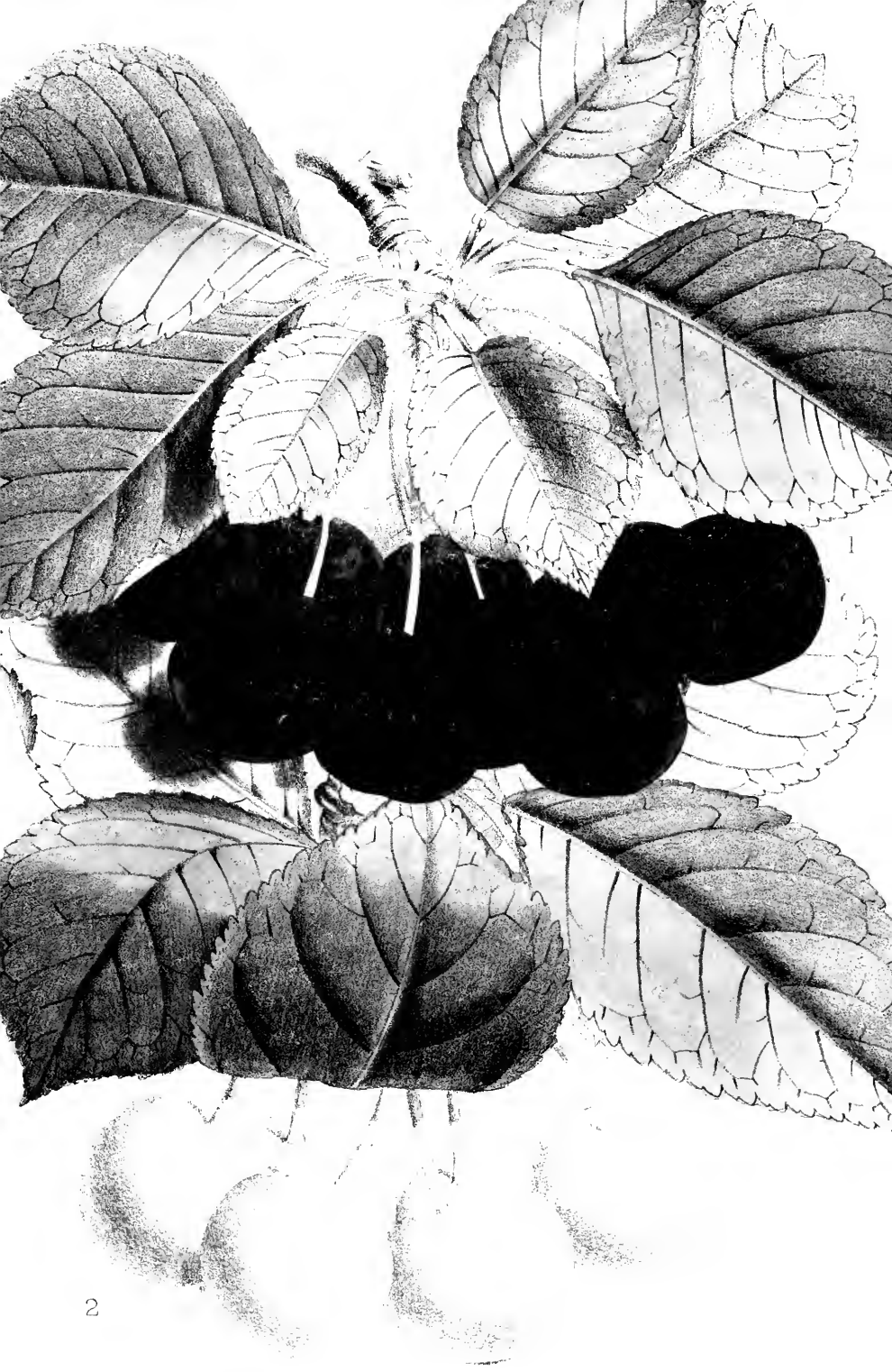
OUT-DOORS.—Pay every attention to the *Fruit* in the fruit-room; pick out all the small fruit, and any that are in the least damaged, and keep all the choice and best kinds in single layers on shelves. Take advantage of favourable weather to plant *Fruit-trees* of all kinds in properly prepared borders. Standards and such as are likely to be blown about by the winds should be neatly secured to stakes. Push forward the *Pruning* of fruit-trees at every favourable opportunity. This is a good time to thin out the crowded branches in Orchard trees. Regulate and tie *Raspberry-canes*, and make new plantations in well-manured ground. Clean, dress, and dig fruit-tree borders.—M. SAUL, *Stourton*.

VEGETABLES.

PREPARATIONS must now be made for forcing *Asparagus*, *Rhubarb*, and *Seakale*. The *Rhubarb* and *Seakale* would succeed thoroughly in a mushroom-house. Where the principle of taking up the crowns of the *Seakale* is followed, in preference to forcing them upon the ground on which they have grown during the past summer, the roots, after being dug up, should be divested of their smaller rootlets, &c., cut into lengths each having a crown, and planted neatly and firmly together in one corner of the structure, in such a position as will admit of a good depth of dry leaves, cocoa-nut fibre, or some similar substance being placed over them, in order to insure that the young growths when they push up, may be well blanched. Light and air must be kept from them during the growing period, as much as possible. The *Rhubarb* should be placed in this or some other warm situation, in the shape of large stools, as taken up, and should have plenty of water applied to the roots. In regard to *Asparagus*, a nice bottom-heat must be secured in a bed, either by means of hot water, or the old method of fermenting materials. The crowns when taken up are to be planted thereon, in good light soil, great attention being given not to permit the heat of the bed to exceed 95°, or what is a better and safer maximum, 85°, at which it should be maintained as nearly as possible.

Late large *Cauliflowers* must be protected from frosts, as must also flowering plants of *Snow's* and *Walcheren Broccoli*. In the case of *Lettuce* and *Endive*, transplant the largest and best plants into cool frames, where some slight protection against frosts and very damp weather can be given. Other successional crops must be kept clear of weeds by frequently stirring the soil between them during fine dry intervals. The same remark applies to crops of *Winter Spinach*; the more frequently the soil is stirred amongst them the better. This last will have made a very strong growth where it was sown at the proper time, and the better plan with it is to thin out the plants well, and to pick off some of the larger leaves for use.

Spring Cauliflower-plants that are transplated into frames and other protective contrivances must have full air, so that they do not become drawn, and too tender to withstand the winter. Those who have not already transplanted these last permanently, should do so forthwith; it is always better to transplant all the young plants, than to permit them to stand in the seed-beds throughout the winter; in dibbling them out, place them more deeply into the ground than previously, as an additional protection. Mulch well around *Globe Artichokes* as a protection against frosts. Make first sowings of *Peas* and *Broad Beans*; *Harbinger* is a high-class new variety. Bring the earthing-up of late *Celery* to a close with despatch; and remove all remaining decaying stems of *Jerusalem Artichoke* and *Asparagus*, as well as other autumn-ripening or summer growths. Those, by the way, who wish to decrease the spring work to the utmost extent possible, might now plant out their permanent crops of *Shallots* and *Garlic*; they will succeed well.—WILLIAM EARLEY, *Valentines*.



Cherries
1. Early Rivers. 2. Monstrous Heart

J. L. Martarlane Del et Lith

Waller

EARLY RIVERS CHERRY.

WITH AN ILLUSTRATION.

THE name of Mr. Rivers has been associated with the raising of new fruits, more especially in connection with Peaches and Nectarines, of which he has given our gardens some of the finest that are now in cultivation; but for some years he has also been engaged in endeavouring to raise early Cherries which would supersede the old Early Purple Gean, which is notoriously a bad one to propagate, and in addition, has a bad constitution. The early quality is, however, so well-developed in this variety, that Mr. Rivers selected it as a basis on which to work, and after many attempts he raised a seedling from it, which combined its early-ripening habit with a hardier constitution. This seedling is the EARLY RIVERS CHERRY, represented at fig. 1 of the accompanying Plate. In reference to it, Mr. Rivers, in a communication to the *Journal of Horticulture*, says :—

"It is now many years since the Early Purple Guigne Cherry was distributed by the Horticultural Society among its Fellows. I have had it more than twenty years, and always noticed with interest its earliness and excellence; but its delicate habit, it being liable to canker and gum, prevented its extensive cultivation. It is but a few years since it occurred to me to improve it by raising seedlings from it, and then again I found difficulty in procuring fruit thoroughly ripe, for the stones from unripe fruit would not vegetate. This is a common thing with early fruits; the pulpy covering ripens, but not the seeds. At last the orchard-house came to my aid, and in the hot summer of 1865 some stones from very fine ripe fruit were sown. In 1866 they made plants from 1 ft. to 2 ft. high. In that summer their tops were cut off, and their buds placed in some Mahaleb stocks. In 1867 they made a fine growth of some 4 ft. to 5 ft. In the autumn of the same year they were potted; in 1868, in the orchard-house, they formed blossom-buds; in 1869 Early Rivers bore its first crop; in 1870 and 1871 the tree bore abundantly, and its fruit were as large as those of its parent, a trifle later, but very rich and good, and the tree luxuriant and healthy."

The MONSTROUS HEART CHERRY (fig. 2) or *Bigarreau Gros Cœuret*, of which we add a portrait, is a very old variety of Cherry, having been described by Duhamel, Mayer, Kraft, and all the noted pomologists of the last century. Its great size, fine colour, excellent flavour, and generally handsome appearance commend it as a variety worthy of general cultivation. The tree bears abundantly, and grows to a large size, with a spreading habit. The sort is admirably adapted for orchard-planting, where the fruit is sent some distance to market, as it bears carriage well, and will keep fresh for several days, provided it is gathered dry. As will be seen from our figure, which does not exaggerate it, the fruit is of a large size, as broad as high, of a regular heart-shape, and marked with a well-defined suture, which is rather deep towards the stalk, but shallow and faint at the apex, where it is marked with a distinct style-point, which is rather prominent. The stalk is greenish, from 2 in. to 2½ in. long, set in a wide but not deep cavity. Skin rather thick and membranous, adhering closely to the flesh, smooth and shining, changing as it ripens from yellowish-white to golden-yellow, splashed and streaked with bright red. Flesh firm, crackling, yellowish-white, with a few faint stains of red next the stone; juicy and richly flavoured. It is ripe in the middle of July.

The accompanying illustrations have been prepared from specimens con-

tributed by Messrs. Rivers and Son, and which had been cultivated in pots in an orchard-house.—H.

VIOLETS: THEIR VARIETIES AND CULTURE.

I FIND the most important point in growing good Violets to be Soil, and this should be porous, as well as rich. Some of our best wild Violets grow in hedge-rows, and hedge-rows are generally a little elevated, either designedly or otherwise, which implies good drainage. I find it necessary, in order to secure quantity as well as quality, to prepare the ground for them. Mine is naturally well drained, so I have nothing to do on that score; but where the ground is flat, and at all likely to lie wet in the winter, it should be dug out to a depth of at least 2 ft.—if more the better—as there should be about a foot of good drainage, and the roots of Violets will go down 2 ft. or more, if the soil is at all suitable to them. A well-drained, good soil, then, is most important to produce good flowers, and an abundance of them.

Perhaps the next thing to be considered is the mode of planting. This I find best done in the following way:—Mark out the beds so that they run as nearly as may be possible north and south; mine are 4 ft. wide, with a pathway of 1 ft., and I plant the first row in the centre of the bed, and the others 18 in. from it, so that the outer rows are only 6 in. distant from the path. It would, doubtless, be better to add 6 in. or even 1 ft. to the path, if ground is not an object, as this will give more space for the feet. My object is to plant them so as to be able to gather the flowers without treading on the bed. This is very important as, in wet weather, constant treading would soon consolidate the most porous soil.

Next comes the position or aspect. This should be sheltered as much as possible from the north and east winds, for I find that when the leaves are frozen these do much injury to them. If a spot can be chosen where partial shade can be had in the summer, so much the better. I plant many of mine to the north of tall trees with naked stems, out of the way of the drip; this allows them to get the sun in winter, while they are partially shaded in summer.

As to the time of planting, this may be done any time from the beginning of September till April, but sometimes they begin to grow freely at the end of March; after this it cannot be safely done, except the weather is moist, and by cutting off the newly developed leaves. This of course does not apply to plants in pots, but to making new beds from the runners of the old ones, which should be done often, perhaps the oftener the better, but certainly no bed should be left more than three years. The best plan is to make up some new bed or beds every year, which gives a supply of early flowers such as is not got in abundance on older ones, besides that the flowers come with much longer stalks.

We now come to after-management. Supposing the weather should set in dry after a bed is newly made, the plants will require to be watered till they begin to grow, whether put in early or late. This may occur to the mind of every

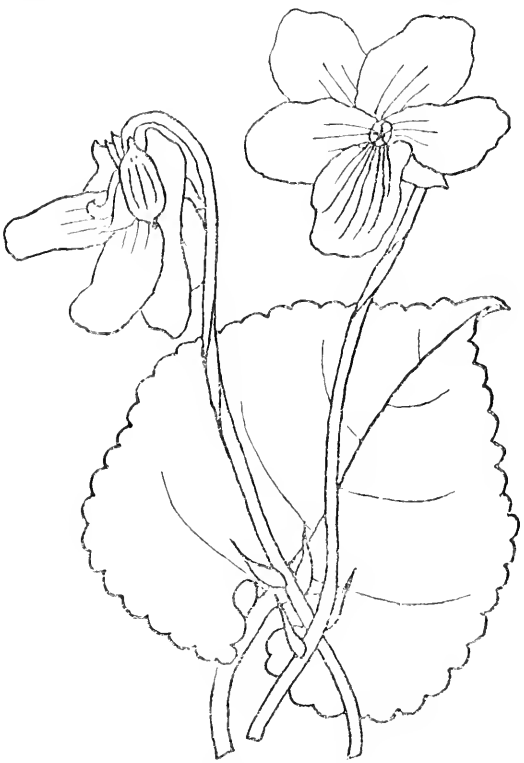
amateur, but not so the taking-away of the runners, &c.; and as they are often severely attacked by red-spider, this is best done at the end of July or the beginning of August, and in tolerably dry weather, or the soot, which should be supplied liberally immediately after the operation, will not remain sufficiently long to destroy the spider. I always set one of my most handy men to do this, as it requires some care, that is, it should be done thoroughly; every leaf should be cut off and cleared away, as well as all the runners that are out of bounds. The soot not only destroys the spider, but also acts as a stimulant. If the plants are not attacked by spider, it will still be necessary to pick off the old leaves some two or three times during the months of August, September, and October, or they will be liable to become mouldy in wet weather, and thus destroy the young growth and flowers.

I have not, I think, omitted anything of importance, but should I not have made myself understood, I shall be happy to reply to any inquiries, addressed to me through this journal. Some may think I have been too minute, to which I reply, that what I have recommended I have learned by frequent failures. Some years since, when I began growing Violets on a large scale, I would have given much for the experience of some practical person, but could not find it; and I went on as best I could, often disappointed in results, sometimes getting but few flowers, while at other times the stems were so short that they were of little use. I know nothing of growing Violets in pots.

I must now refer to some of the varieties. The old *Russian* is one that has not its equal in every particular; to get it early and with good stalks, one must have frequent plantations, and on good soil. *Russian Superb* is a valuable variety for early use, beginning to flower at the end of August; but this, too, has very short stalks, unless frequent plantations are made in good soil. *London* and *Crimean* are much alike, of the colour of the old *Russian*, but with very long stalks, often 6 in. long, but they do not flower much till February and March. *Devoniensis* is of a much deeper colour, with a stalk equally long, but is smaller, and like the two last named, it does not bloom much till February and March, except on newly-made beds; on beds made at the end of February or March, you get a good supply of flowers through the September and October following, but few again till February. The three last named are very strong-growing sorts. Then we have *The Czar*, and *Giant*, two very strong growers, but free bloomers in February and March; they begin earlier, but will not bear the frost very well, so that February and March may be said to be their season; some blooms may, however, be got in September and October on new plantations. The *White Russian* does not bloom much till March, except on newly-made beds, and is a very small, poor flower; the *White* Violet of the woods and hedges is far superior to it in shape and size, and if cultivated like the others—that is, by making frequent plantations—you get a few blooms all the winter, and a profusion at their season. Mr. Boothby, of Louth, has a white, which he calls *Giantess*, which we may hope will prove superior to the old White Russian. There are two other sorts which might have a very small spot allotted to them. The one is a dull red, I should think, a mere variety of the hedge Violet, as it only differs in colour, and most persons prefer the old white to it. The other, I think, is altogether distinct from the ordinary white, being much smaller, of a very pure white, with a deep purple spur, the footstalks both of the flower and of the leaf downy; this always comes true from seed, and under ordi-

nary circumstances is some ten days or a fortnight earlier than the common white, but it is very weak-growing, and requires nursing. A pale blue variety which I got last spring at Hartley, near Dartford, in Kent, might be cultivated, I think, where there is a love for variety; of course, I cannot speak definitely about it.

The above are all the single Violets I know anything of, experimentally, except my own seedlings. Of these *Victoria Regina* has been pretty well tested, and I have every hope it will be a great acquisition. It is as hardy as Crimean, London, or Devoniensis, a stronger grower, and having much the habit of these varieties; the stalks equally long, much stouter, and the blooms much larger, their average size being 1⅛ in., or a little over; some blooms when very fully expanded



VIOLET VICTORIA REGINA.

measure 1½ in. across, but then they are past their best, that is, they have lost their symmetry; the blossoms before they have gone too far are beautiful in shape, and the scent is said to be delightful, but as a bloomer I cannot say it is superior to Devoniensis, London, or Crimean, except that I get more from December to February. This is the greatest improvement I have ever known on all points. I have another I have named *Prince Consort*, which is more in the way of the Czar, as to constitution, not hardier than that variety certainly; this will be fine for the conservatory, as the foliage is very handsome apart from the beautiful flowers, which are even larger than those of Victoria Regina, but do not keep their colour so well.

I have many other varieties which I intend to propagate for the sake of seed. Two are giants indeed, with flower-stalks over 9 in. long, and very large ovate cordate leaves. Some seedlings have a tinge of copper or bronze about them, but they vary so much that an inexperienced person would not suppose they were from the same parents.

I must, however, leave these for the present, and come to the Double varieties, though these do not suit me so well as the singles for market purposes. I grow the *Tree*, the *King*, and the *Scotch*. These are somewhat alike, except that the last does not bloom so long as the other two; they are very beautiful, so I think, but I do not get so much demand for their blooms as I do for the singles. Then there is *Brandyana*, a blue purple and lavender-striped variety of great beauty, but much smaller than either of the above; young plants in *good* soil bloom all through the winter, but in February and March it is often one mass of flowers. This is worthy of a place in every collection, but not to gather from, as it is such a bloomer that one rarely gets the stalks long enough to pluck. *The Queen*, although one does not often get good blooms of it, is yet something beautiful when obtained. The old *Double White*, too, is not to be despised. The *Neapolitan*, as every one knows, is beautiful. *Marie Louise* is perhaps not so well known; this is much deeper in colour, and I think hardier, certainly fine. The *Double Red* is fine to gather from, but is such a wild-growing plant that, except for picked flowers, I cannot recommend it; for this, however, it is quite worth growing; it is a little like the double red Hepatica, and blooms on frequently-made beds as long as any variety, that is, from September till March. *Alba compacta* is a double white, very distinct, well named, but a shy bloomer. There are some other varieties which I do not know well enough to remark upon, such as *New York*, *Reine Louise*, *White Tree*, doubles; and Mr. Boothby's *Beauty of Louth* and *Multiflora*,—the last said to be very hardy,—singles. I have had my plants from Mr. Steedman, of Thornton Heath; Mr. Dillistone, of Halstead; Messrs. E. G. Henderson and Son, and Mr. T. S. Ware, of London.—GEORGE LEE, F.R.H.S., *Market Gardener, Clevedon, Somerset.*

THE RENOVATION OF OLD GARDEN SOILS.

THE renovation of a worn-out garden soil, and its clearance from the insect pests which a long course of cropping has established in the land, are difficulties which present themselves in very many instances, and which a discussion of the subject may help to render less insuperable than they sometimes appear.

The vigorous growth of trees, and the unchecked luxuriance of vegetables, on fresh untainted soil, assures us that nothing is more congenial to vegetable health than maiden soil. There is a substantial vigour in vegetables thus situated, that is never seen on land artificially enriched. Land, no matter of what character originally, becomes, under a long course of treatment, what is called "garden soil;" and there is an inertness about it that the most stimulating manurial mixtures fail effectually to overcome. I am afraid it is too much the practice to treat our ailing and effete garden soils as the celebrated Mr. Squeers treated his boys—we give them the same restorative mixture all round, year after year; not exactly the brimstone-and-treacle application of the schoolmaster, but the uniform dressing of *dung*, as an all-sufficient remedy for loss of power. I am afraid we

sometimes over-dose our patient, and as a consequence, we get flaggy vegetables, in which a sensitive palate can detect something that suggests a less cleanly place than a garden. The use of burnt earth and charred vegetable waste and charcoal to potato, carrot, and onion crops may, in most cases, be advantageously pursued, and such a dressing will have a permanently beneficial effect. The occasional use of lime, if properly selected, will be of great advantage; the gritty limes from the oolites are better than the stronger liassic limes, and chalk-lime is to be preferred to that made from magnesium stone.

One remedy for the exhaustion of available silicates is unfortunately not generally attainable. It is the granite chippings and dust that is formed so largely in quarries where that material is worked, and which, though cheap in the district, would be dear sent to a great distance. This is an admirable dressing, and its value to Fruit-trees is incontestable. The Jersey fruit-gardens rest upon granitic detritus, and continue to produce fruit of unfailing excellence.

The practice I have pursued for many years, of bringing up during the winter digging a certain amount of fresh material from the sub-soil—in my case a strong clay—and spreading as much over the surface as will afford a fair dressing, and no more than the weather can operate upon and pulverise, has the double effect of deepening the culture and fertilising the land. I take care to spread a pretty good dressing of burnt earth over the crumbling masses of clay, to prevent subsequent coherence.

But after all, the applications I have alluded to are, it is true, in relation to Vegetables, but temporary dressings, which give a definite amount of assistance to the compound in which a long course of doctoring has made a healthy and naturally fertile action more and more difficult. There remains, then, the universal prescription for exhaustion—rest; rest from that system of cropping which has gone on probably for a century; rest also from the physicking of dung, and from the teasing and upturning of the spade. I do not mean absolute rest, for Nature in her operations is never still, but a change of system which amounts to a rest; and this may be accomplished by 'laying down,' as they say in farming, the quarters of the kitchen garden for some seasons, not allowing weeds, on account of the legacy of seed they would leave, but cropping the ground with some close-growing, deep-rooting perennial or biennial plant, as Broom, Sainfoin, Lucerne, Flax, or any vigorous native plants that would scour the ground of its grossness, tend to open up its sub-soil by sending their deeply penetrating roots into it, liberate mineral fertilisers by vegetable action, and clear the ground of the innumerable insect plagues, which find happy hunting-grounds in the garden soil, and in the sweet and succulent crops which are grown within it. Deprived of their accustomed food, and the circumstances that favoured their propagation, those great and permanent pests, the carrot-worm, the potato-grub, and the small centipede, would be checked in their ravages, and would perish.

It may seem a little inconsistent with any progressive system of cultivation, to recommend a plan that is commonly pursued by the peasant proprietors of

Brittany, the worst farmers in a badly-farmed country; but to meet the special circumstances I have indicated, I think it may be tried with a reasonable chance of success. The Breton farmer will take crop after crop from his land, until culture ceases to be remunerative; he then allows it to relapse into a state of primitive weediness, and after a few years, when the action of the native plants on the soil has liberated certain constituents of fertility, he again grows his corn and buckwheat.—WILLIAM INGRAM, *Belvoir*.

HOW TO GROW PLEIONES.

AMONGST terrestrial orchids there are none more beautiful than the many varieties of *Pleione*, which are natives, for the most part, of the hills of India, and growing at a pretty good elevation, they do not require any great amount of artificial heat, and flowering as they do in the Autumn months, when flowers are scarce, they are doubly valuable. They thrive in a winter temperature of from 50° to 55°. These plants are often found growing on blocks, and in this way I have often grown them well, and been very successful in flowering them; but during a visit to the nursery of Mr. John Shaw, of Bowden, I was much struck with the healthy appearance of some plants I saw growing in the stove in the month of July. The bulbs were the best I had seen, and upon inquiring of Mr. Shaw what was his mode of culture, he told me they were potted in leaf-mould pressed firmly into the pots. I immediately adopted the plan, mixing with the leaf-mould about one-third rough peat and a small quantity of silver-sand, and filling the pots about half-full of broken crocks. The result has been most satisfactory.—G. EYLES, *South Kensington*.

LILIUM GIGANTEUM FOR THE OPEN BORDER.

WHILST endeavouring to say a few words in favour of the above object, I would beg at the same time to remark that this noble species of Lily is not nearly so extensively grown as it deserves to be, the more so as it is of easy management when its *wants are known*. The roots or bulbs are sufficiently hardy to endure frost through the winter months while in a growing state. Cold, and even inclement weather does not seem to check its noble and gigantic growth, when throwing up its stately stem for flowering; and to watch its progress up to the time of flowering is very interesting, as it clearly outstrips all other hardy plants in ordinary cultivation. The last two springs have been unusually cold, and the growth of many things usually considered hardy was much checked and injured. *Lilium giganteum*, however, kept on its way, and two out of five plants which flowered with us this season, attained the height of 10 ft., one having 20 and the other 21 flowers open on it about the end of June. Two roots, or rather offsets of last year's flowering bulbs, also threw up flower-stems towards the end of July; one had two stems, which opened their flowers about the end of August; this will show its free-flowering property.

To grow it out-doors successfully, a warm sheltered situation, fully exposed

to the sun, must be chosen. Dig out a pit 2½ ft. diameter, by 2 ft. deep; make the bottom under this dry by drainage if at all damp, and fill it up with light loamy soil, mixed with about one-third of peat-earth, and a few spadefuls of well-decomposed cow-dung. Plant on this, and keep the bulbs as near the surface as to be just covered. Water freely in the growing season, especially at the stage of coming into flower; two or three pailfuls once or twice a week will not be too much. A slight mulching after the foliage has died down may be applied, as a security against the injuries of frost. The roots after flowering should be taken up, the offsets separated, and then again planted in fresh soil.—J. WEBSTER, *Gordon Castle.*

MUSA SUPERBA.

THIS fine plant, a native of India, and which appears to have been originally introduced about fifty years ago, has reappeared during the last year or two amongst the subjects employed for furnishing the sub-tropical garden. For this situation, as we learn from Mr. Roger, who has grown it in Battersea Park, its growth requires to be perfected before it is turned out. Even then, the experience of the past summer has not established its suitability for sub-tropical work, as, either from the effects of sunshine or cold, it is apt to put on a sickly yellowish hue, if placed in ordinarily exposed situations: hence he purposes trying it next year under the shade of trees.

As a conservatory plant it is, however, one of the most desirable species of the genus, having something of the character of *M. Eusete*, but being much more easily managed. The plant is of a dwarf, stocky habit of growth, with large, broad, pale-green, handsome foliage. It is increased by seeds—which are now frequently offered for sale—and these, if sown in strong, moist heat, in January or February, and grown on rapidly as one would a Cucumber, will produce large, fine plants, suitable for the ornamentation of the conservatory or sub-tropical garden by the month of July. There is scarcely any plant with which we are acquainted that grows so rapidly from the seed as this fine *Musa*. The plan is to sow the seeds singly in small pots, in good bottom-heat, and as soon as up and rooted, pot into larger ones, which they will quickly fill with their large fleshy roots. The plants, now perhaps 18 in. high, may be potted into 10-in. or 12-in. pots, and gradually hardened off from the warm stove to the cool conservatory. This is Mr. Barron's treatment of them, and under it they will in one season attain a height of over 3 ft., and form one of the most noble and attractive of autumnal decorative plants. The enlarged bulb-like base of the stem, which is very imperfectly represented in the accompanying cut, obligingly communicated by Messrs. Haage and Schmidt, of Erfurt, is very peculiar and well marked, and is formed by the thickened persistent bases of the leaves.

This peculiarity, as Mr. Roger points out, governs the treatment of the plants, at least those of them employed for sub-tropical gardening. As soon as they are

brought in from the open air (having been plunged out during summer), the pots are laid on their sides under the stages in a moderately warm house, and are gradually dried off. When started in February or March of the following year, they resemble a monster Cape bulb, full of pithy vitality, which, in a genial

MUSA SUPERBA.

heated atmosphere, rapidly gives forth a succession of leaves. For whatever purpose intended, the ripening-off during winter seems to be a cardinal point in its treatment.—T. MOORE.

THE FAILURES IN WALL FRUITS IN 1873.

I BELIEVE Mr. Fish is quite right (see FLORIST AND POMOLOGIST, p. 231) as to the scarcity of superior wall-fruit, when he says that the cause must be attributed to the immature state of the wood and flower-buds made last summer and autumn. Of a long south wall here, principally covered with

Apricots, a portion was covered with glass lights in the autumn, to keep off the heavy rains, and to help to ripen the wood with the little sun we had. The Apricot-trees which were so covered showed far bolder blossoms than the trees not covered, and ripened a moderate crop. The uncovered trees showed plenty of bloom; but it was weak in its formation, and set badly, and on these there was not above half a crop of fruit ripened.

Some varieties of *Pears* on the south walls, such as *Marie Louise*, *Louise Bonne*, *Beurré Superfin*, *Doyenné du Comice*, *Beurré d'Amanlis Panachée*, *Glou Morceau*, and *Winter Nelis*, bore excellent crops. On other aspects, however, the same varieties failed, as well as on the standards.

Plums, whether on south-east or west aspects, did not show much bloom, and the crops were a total failure on some varieties. In the orchards, the standard Plums, although in the case of some of the varieties showing plenty of bloom, likewise failed in setting; even that hardy variety the *Damson* is so scarce in the markets here, that it is selling at 6d. per lb. All this failure in these crops must be attributed to the badly ripened wood made in 1873, for there were no very severe spring frosts this year to which it could be attributed.

In a glass-cased wall here, provided with artificial heat, the *Peaches, Nectarines, Plums*, and *Cherries* grown, bore very good crops. Thus, it appears, a few degrees of fire-heat in the spring and in the autumn to ripen the wood, are sufficient to secure a full crop in bad seasons.

The *Apple* crop in this locality was likewise a failure this year, the trees of some varieties being loaded, and others quite the reverse. Even in the trees which bore good crops, there was in the produce a greater proportion of small fruit than usual, showing the immature state of the wood and blossoms at the setting time.—WILLIAM TILLERY, *Welbeck*.

NEW SHOW PELARGONIUMS.

PERHAPS it is well to retain the old designation of "Show Pelargonium," when one comes to speak or write of the large-flowered section, as it is one that is so constantly employed in schedules, that were it changed, it might lead to some confusion. It may seem a little paradoxical to apply the term to one class of Exhibition Pelargoniums only, as all are used for show purposes, but in the pages of the FLORIST AND POMOLOGIST it will be readily understood that the "Show Pelargonium" really means the large-flowered type.

Though Mr. Hoyle has passed away, the work of improvement he carried on in this favourite flower in so remarkable and successful a manner, is still continued by Mr. Foster, as the few later batches of flowers raised at Clewer not only evidence the old regard for high colour, and its certain attainment in a progressive degree, but also all the characteristics that Mr. Hoyle used to aim at, and so abundantly secured—size, substance, form, and novelty of colour. The "Show Pelargoniums" of 1871-72 were grand in their development; but those of 1873 have surely reached a higher level of perfection.

The floricultural records of the past year show that no less than eleven varieties of Show Pelargoniums were awarded First-Class Certificates. Alphabetically arranged, the list of certificated flowers runs as follows:—*Blue Boy* (Foster), pale purple lower petals, rich glossy dark top petals: a fine and distinct variety. *Constance* (Foster), delicate salmon-pink, with dark top petals, margined with orange: very fine. *Duchess of Cambridge* (Foster), very bright pale red, crimson top petals, with a very dark blotch; a fine glow of colour. *Duchess* (Foster), orange-carmine lower petals, glossy dark top petals: very fine quality. *Grande Monarque* (Foster), salmon-rose lower petals flushed with orange, dark top petals: large and bold. *Protector* (Foster), pale rose lower petals, with dark veins, dark top petals; very fine. *Red Gauntlet* (Drewry), bright pale red, with blood-crimson top petals, and large dark blotch; very showy. *Ruth* (Foster), soft rose, with dark upper petals: a fine and distinct variety. *Scottish Chieftain* (Foster), orange-carmine lower petals, with dark stains, dark top petals and white throat; extra fine. *Sunray* (Turner), very bright pale red, flowers small, but freely produced: an exceedingly showy variety, and a fine decorative plant. *Triomphe de St. Maud* (Turner), bright red, darker on the top petals, and veined with dark; a very useful decorative variety. *Queen Victoria* (Bull) must also be commended as a fine, free-blooming decorative variety, having crisped petals; the ground-colour is bright vermilion, the petals being fimbriate and margined with pure white, and the upper ones blotched with maroon; it produces very large bold trusses, and will be well adapted for market work and decorative purposes generally.

To the section of Fancy or Ladies' Pelargoniums additions of first-class value are only made at rare intervals. One fine variety, *The Shah* (Turner), received a First-Class Certificate during the past summer. It is a charming maroon-red flower, with a bold white throat, of fine form, and very distinct in character.—R. Dean, *Ealing*.

DENDROBIUM CHRYSOTIS.

I AM pleased to see Mr. Douglas's remarks with regard to this free-flowering Dendrobe. Although sent out under the above name, and also described as such in the *Gardeners' Chronicle* and Florist, Dr. Hooker considers it to be a species discovered by himself so long ago as 1848, in Sikkim, and named *D. Hookerianum* by the late Dr. Lindley. [But in this opinion Professor Reichenbach, who described it, does not concur.—Ed.] There are two or three forms of the plant in cultivation, and this is easily to be accounted for, as it seeds very freely in its native habitats. One form bears from three to four flowers on a short spike, the individual blooms being large and brightly coloured. Another form bears as many as nine or ten smaller flowers on a much longer spike, and the flowers are of a pale yellow colour, similar to that shown in Dr. Hooker's figure in the *Botanical Magazine* (t. 6013). In habit the plant is quite distinct, its pseudobulbs, when denuded of foliage, being similar to those of a strong-growing *D. McCarthiæ*. The plant flowers at different periods of the year, and

the only fault it has is, that the beauty of the golden, crimson-blotched flowers is fleeting, when compared with that of its congener, *D. nobile*. Like all other Dendrobes, it requires liberal encouragement to make strong growths, and in this species they bloom the same year, often bearing four or five spikes each. It is also found in Assam, from which locality it has been largely imported by Mr. Day, a well-known amateur orchid-grower.—F. W. BURBIDGE.

PICEA PINSAPO AT COMBE ABBEY.

YOUR readers may be surprised to hear me complain of a difficulty we have here with this, in my opinion, most beautiful of the Fir tribe. Judging from the beauty, perfect symmetry, and health of a couple of trees which had been planted several years ago, and which have now reached the height of about 35 ft. each, I concluded that the Pinsapo was a tree well adapted for the climate and grounds of this place. Of young plants I bought largely, and planted freely. A double avenue was formed of Wellingtonia and Pinsapo; the outer rows being Wellingtonias and the inner Pinsapos. The Wellingtonias went well away, and are thriving amazingly; but with the progress of the Pinsapos I am much disappointed. The whole difficulty lies in the fact of the Pinsapo making an early spring growth, and which is too frequently followed by a late spring frost, which nips all the forward terminal buds. Those buds which have been fortunate enough to escape, break with an over-balanced amount of vigour, and the sap being concentrated so powerfully in the shoots produced, leaves them at the end of the season in an unripened, immature, watery condition, the top being sure to perish during the first visit of severe frost.

As this is the first instance, to my knowledge, of Pinsapo taking harm from having made a premature growth, and of having been injured by a late frost, I have felt desirous to draw attention to the mishap. The two beautiful specimens above alluded to are situate on a sheltered bank, and had the benefit of other trees planted at the same time, and growing thickly around them. On reflection, it need not be surprising to find the Pinsapo not quite at home on our low humid level and inconstant climate, when we know the tree to be perfectly at home on the mountains of Spain, at an elevation, according to Gordon, of from 4,000 ft. to 6,000 ft. There the trees grow in a forest, and by their shelter collectively take care of themselves. But in this country they are generally found dotted about on the lawns like so many sentinels or soldiers at skirmish; and all this because it has become fashionable to follow the dictum of Cockney landscape gardeners, who advise "the undulating glade, with a plant stuck upon this knoll and another upon that." Whence came those magnificent specimens of Oak which so plentifully adorn the landscape of the Midland Counties? Not, certainly, from our modern system of dotting a tree here and another there, but they were nursed up and are left to us as living monuments of such noble forests as Sherwood and Arden.

I am, however, pleased to say, that we have got many very nice thriving

specimens of Pinsapo coming on in sheltered places, where they are protected by other trees from driving blasts and sleety showers, which in spring—just at the time when growth is being excited—come sweeping over the plain.

It is notable that in our exposed specimens of Pinsapo we generally find the side exposed to the south-west suffer most, and the effect left upon the young bud by the driving sleet or wave of cold is just as if the buds were exposed to a searing heat, and were left on the plant red and crisp, and which, unless picked off by the hand, will remain on the plant for years after.—Wm. Miller, *Combe Abbey Gardens.*

NE PLUS ULTRA STRAWBERRY.

In addition to the Strawberries mentioned by Mr. J. Powell in the Florist (p. 256), I can recommend the variety named at the head of this paper. It is not quite so early as Keens' Seedling, but bears much larger and finer fruit, and out of doors is a very heavy cropper. It was exhibited as a seedling a few years ago, at the York Gala, by Mr. Browtho, of Beverley, and received a certificate from the judges and some of the leading horticulturists present on that occasion. This *Ne Plus Ultra* is a famous market-gardeners' Strawberry, but I believe it has not yet got into cultivation so largely as it deserves. I have distributed it amongst a few of my friends, but judging by the inquiries made about it at the Leeds and York Shows, where I exhibited it in June last, I do not think it is at all generally known. I have ordered a supply of *La Grosse Sucrée*, to try it for early forcing, as from the description given it seems a very desirable variety to grow in early vineries and peach-houses.—John Clark, *Studley Royal.*

ADIANTUM HENSLOVIANUM.

WITH AN ILLUSTRATION.

This very beautiful addition to our cultivated Maidenhair Ferns has been introduced from Peru by the Messrs. Veitch and Sons, who have communicated the specimen here figured. The plant has borne one or two other names, that of *A. sessilifolium* having been given to it by Sir W. J. Hooker, and that of *A. Reichenbachii* by the traveller Moritz; and it was not till long after the former of these was published that it was known to be the same species which Dr. Hooker had previously named after the late Professor Henslow. Such, however, proves to be the case, and consequently by right of priority the name *A. Henslovianum* is retained.

As an ornamental stove evergreen fern, it must be regarded as a decided acquisition, quite distinct in aspect from all other *Adiantums*, and as charming as any of them. Our plate gives a very good idea of the fronds of moderately developed plants. When of full stature they are from 2 ft. to 3 ft. in height, proportionately broader, and with the lower pinnæ slightly branched, thus becoming tripinnate. The stipe is of moderate length, erect, dark brown, glossy, while

the rachis is, like the under-surface of the fronds, hairy. The texture of the fronds is rather thin and herbaceous, and the colour a light green. The ultimate segments are from half an inch to three-quarters in breadth, and about half as much in depth, dimidiate, the lower side being nearly straight, and the upper side rounded and also bluntly lobed. The sori are obversely reniform, encircling the base of the hollows cut in the marginal lobes. There is one peculiarity which it shares with *A. concinnum*—namely, that the basal pinnules are so placed that their inner edge is imbricated over the main rachis.

The pale green colour, pubescent surface, overlapping pinnules, and compound division of the fronds of this fern give it a peculiarly distinct appearance, and our illustration shows that it is not wanting in beauty. It is a native of Peru, and Columbia, and of the Galapagos Islands.—T. MOORE.

SUPPLEMENTARY NOTE ON NEW GRAPES.

I HAVE been much interested by Mr. Fowler's remarks on "Some of Our New Grapes" (p. 241); and can readily endorse all he has said concerning these. I would even like, if possible, to make his remarks more valuable to your amateur grape-growing readers, by a reference to one other new Grape, now about to be sent out, and which from all points of view, up to the present, seems to possess most promising qualities and characteristics. I refer to the Grape named *Waltham Cross*, which, as is known, is a white or amber-coloured variety, with long muscat-like berries, of good flavour, of unusually large size, and borne in finely-developed, large-shouldered bunches. This variety, besides being an amber-coloured grape without a muscat flavour, has the good quality of hanging well, and should be chosen as an associate for Lady Downe's seedling, and others of the class which are planted more especially for being kept later than ordinary. If this Grape maintains its present well-earned good character, a better associate could not be found for our Black Hamburgh Vines, since identical cultural conditions will suit both alike.—WILLIAM EARLEY, *Valentines*.

NEW PEAS.

JUDGING from the number of first-class certificates that have been awarded by the Royal Horticultural Society during the last two seasons to New Peas, we may reasonably expect the old sorts to be summarily swept out of cultivation. If a first-class certificate means anything, I think it ought to mean that the variety under notice is an acquisition, and better than all others of the same class. If this is so, there must be some grand things in store for us, and I trust they will turn out to be as good as the Fruit Committee of the Royal Horticultural Society have led us to believe they are.

I am sure no one will dispute with me when I state that we have, of late years, been awfully gulled in this matter of so-called New Peas; indeed, my experience of even Mr. Laxton's new sorts has more than once led me to the conclusion that, notwithstanding the brilliant descriptions given when first sent out upon trial,

the majority of them are not worth growing a second time; and with the exception of this year's new ones, I am of opinion that there is scarcely one of those sent out during the last five years that has proved a decided advance upon those in cultivation previously to that date. I cannot say much of this year's sorts, having only grown Carter's *G. F. Wilson* and Williams's *Emperor of the Marrows*. They have both proved first-rate peas in their season. *G. F. Wilson* is a strong robust grower and a most abundant bearer, having the same appearance as Veitch's Perfection, but I think it is a few days earlier, and a little hardier than that fine sort. *Emperor of the Marrows* is a tall, strong, branching, wrinkled white Marrow, producing an immense crop of fine large pods; this is very like our old friend British Queen in her true colours; but be that as it may, it is a first-class sort, well worth growing where large marrow peas are esteemed.

Having to supply a large establishment where green peas are wanted every day they can be had, I am often sadly taxed as to the best sorts to grow to keep up the supply from May till November. Up to the present time I have not found any to beat the following:—For sowing during November for first crop, *Dillistone's Early* and *Maclean's Little Gem*. To sow during December and January, *Prizetaker*, which is the only Marrow that I have ever found it safe to sow before February; Alpha and many of the so-called early Marrows are on the score of hardiness nowhere, compared to Prizetaker. To sow during February and March, *Maclean's Prolific* and *Best-of-all*. To sow during April and May, *Veitch's Perfection*, *Emperor of the Marrows*, and *G. F. Wilson;* and in June and July, *Maclean's Premier* and *Ne Plus Ultra*.

On the 20th of June I sowed six quarts of *Premier*, and on the 4th of July eight quarts of *Ne Plus Ultra*, and from the beginning of September up to October 22nd, (when this is written) we have been gathering from these about a peck nearly every day, and they look as if they would continue for weeks yet, if the weather will only keep open. Such is my experience of Peas, and if any of your readers can recommend better sorts for general garden purposes, I believe they will do a kindness to many others, as well as to—J. McIndoe, *Bishopsthorpe Palace Gardens*.

AQUATICS.—Chapter XII.

OCCASIONALLY the Marsh Cinquefoil, *Comarum palustre*, a mimic Potentil, may be met with in shallow ponds in some of the shady quiet nooks of Old England, more especially northwards. It usually grows to about 18 in. in height, the stems being somewhat decumbent, and emitting roots rather freely. The leaves are alternate, sheathing the stem at the base, and consist of five finely-toothed leaflets, which are glaucous beneath and dull green above, and bear no remote semblance to those of some species of wild Rose. The flowers are of a dark chocolate-colour, and in size and form look very like some of the old single Potentillas, rarely exceeding the size of a shilling; they are produced through most of the summer months, and the plant becomes deciduous

in winter, leaving nothing visible but the cylindrical smooth reddish-brown stems. It is worth cultivating in shallow ponds or streams, on account of its dissimilarity to all other aquatics.

The Water Dropwort, *Œnanthe fistulosa*, is rather curious than beautiful. It usually attains to the height of 2 ft. or 3 ft., the stems being quite hollow or pipe-like, while the leaves vary from 4 in. to 6 in. in length, the radical ones being twice pinnate, of a light-green colour, and bearing a marked resemblance to those of the carrot; hence its vulgar name of Water Carrot. The flowers, which are collected into umbels, are of a pinkish-white, and produced about midsummer. It is by no means showy, but being an umbelliferous plant, is worth culture for the sake of variety. Let it be planted near the margin, as it is of small growth when not in flower.

The *Œ. pimpinelloides* is another British species of smaller growth, but not worth introducing into small collections. The *Œ. carolinensis (Tiedemannia tereti-folia)*, with its singular filiform leaves, is not at present in cultivation.

The *Polygonum amphibium* is a British perennial, not unfrequent in ponds and ditches. Its prostrate stems emit at the nodes small roots like scarlet threads. The leaves are alternate, 5 in. or 6 in. long, by 1 to 1½ in. broad, lanceolate and somewhat downy; the flowers are borne in terminal, cylindrical spikes, and are of a clear rosy-pink. The leaves lay flat on the surface, and the flowers stand 6 or 8 in. above the water. It is generally in full bloom in August, and is then very showy. It should be planted near the margin. One form of the plant grows and flowers readily in the ordinary soil of a garden, and this has a striking resemblance, as far as the inflorescence is concerned, to *P. Brunonis*, a plant sent some years since by Captain (now General) Munro, from the northern parts of India.—W. BUCKLEY, *Tooting*.

QUERCUS LIBANI.

WE have here a fine deciduous Oak, introduced from Asia Minor to the Jardin du Muséum, at Paris, some few years since, and of which an account, accompanied by the annexed figure, has been published in the *Revue Horticole* by M. Carrière. The plant appears to vary somewhat from seed, the form here figured being taken as the type. It forms a vigorous and handsome-looking tree, with spreading branches, having a brownish-gray bark. The leaves are coriaceous, of a bright glossy green colour, elliptic-lanceolate, rounded and rather unequal at the base, margined with stiff spinescent teeth. The male flowers, which open about April, grow in slender catkins, the females, solitary or in pairs, appearing later in the summer, and as in some other Oaks, taking a second year to arrive at maturity; indeed in April, when the males are in blossom, the young glans or acorns are already like small peas. The cupules, which embrace about half of the acorn, are covered with numerous fimbriate imbricated scales, the upper ones smaller and closer, and forming a thick pad crowning the cupule. The acorns are about 1¼ in. in length, and about

1 in. broad, truncate at base, rounded at the tip, with a very short apiculus. *Q. Libani* matures its fruits, which, when ripe, are dark maroon, almost black, in the climate of Paris, in the early part of October. In order to preserve the type in its true form, this species, since it varies from seed nearly as much as our other

QUERCUS LIBANI.

European Oaks, must be multiplied by grafting on the common sorts. It accommodates itself perfectly to any good soils, including chalky ones, which are not too heavy or retentive of moisture.—T. MOORE.

ON ORCHARD-HOUSE MANAGEMENT.

TO my description of the structure given at p. 219, I will now add some details of its interior management, just mentioning that although enjoying a southern facing, its shape is nearly a crescent. On the whole wall a neat wire trellis is fixed, to which all the trees are tied. Nailing should never be resorted to, for besides disfiguring the wall, the shreds offer a safe retreat to that annoying enemy, the earwig. At the curve of the house facing east, I grow *Plums* only, which thrive admirably and produce abundant crops of highly-flavoured fruit. Eight trees planted out supply the house, furnish many presents, and leave a surplus for preserving. The wall at this curve is entirely occupied by a tree of that delicious early Plum *Angelina Burdett*, which, with the protection afforded, furnishes in abundance the first wall-fruit of the season. At the opposite end of the house, facing west, the curve is cropped with *Figs*, which receiving the whole afternoon's sun, are very rich and excellent.

Between these curves the main wall faces south, and is occupied first by eight *Vines* grown on the single-rod system, and then *Peaches* and *Nectarines* as the early crop. But before I go further, I must just speak of these vines. They are now covered with noble bunches of grapes, which would not disgrace Her Majesty's table. My intention was to have restricted their produce to twelve bunches each, but their average is fifteen, and the strong ripe rods for next season's work show that their energies have not been overtaxed. They now succeed the early vinery, and will yield an ample supply to the family till Christmas.

A few feet down the roof strong claws support, through the whole length of the house, neat deal shelves, on which are placed zinc troughs broad enough to hold a 24-pot. In these troughs I place 100 pots of *Strawberries*, equal numbers of *Sir Joseph Paxton*, *President*, and *Dr. Hogg*. But I must digress a moment to describe their preparation. The first runners thrown out by the garden crops are firmly secured to the ground by pins. In a few days these will send forth other runners, which must be pinched off. By the end of July these layers will be robust plants, and ready for removal. Twenty-fours are a nice-sized pot for their reception, and they should be perfectly clean. A few bits of charcoal and coarse bones, if you have them, improve the drainage by being mixed with the crocks. The soil should be firm and unexhausted, and mixed with one-third of old manure, or better still, old cow-dung. The plants are carefully lifted, and in planting them I ram the mould very firmly into the pots till they are full. The pots are then well watered, and stand in the shade for a couple of days, when they are placed on gravel, or any substance into which the roots will not run. Here they remain till October (the runners being in the meantime frequently removed), when they are placed in the zinc troughs close to the glass till the new year begins to feel the influence of lengthening days, when they are cleaned off. Their growth will soon be rapid, and their flowering profuse. Pot-watering will now be necessary, and when the height of the sun and the rapid growth of the plants, added to the swelling of the fruit, render that supply insufficient, the usefulness of the troughs will be recognised. With the prospect of a fine day pour into them a liberal supply of fresh water, which the plants will eagerly take up, and by the next morning will require another supply. I gather the first fruit about May 15, three weeks in advance of the out-door crops. This crop I may pronounce my greatest success; it is abundant, the fruit large, highly-coloured, and of exquisite flavour, and it will hang several days after maturity without deterioration. I do not gather it in small fancy baskets, but in good sensible-sized dishes, enough for the family and many friends, who greet them with a warm reception as the first fruit of the season. An experienced nurseryman went through my houses early in June, when the strawberries were hanging in rich clusters overhead, and he said to me, "Well, D., this ought to be seen; I never in my life saw anything to equal it." The pots bear continuously till the garden beds begin to ripen, when they are removed, and having never been forced, are very useful to a neighbour, who by planting them at once in good soil, may obtain a full crop the following summer.

I come now to the body of the house. This is entirely occupied by planted-out trees of *Peaches* and *Nectarines* in two rows, 5 ft. apart, and these, with an average amount of sunshine, will produce fruit equal to that from the wall. My method of training them shall close this paper. I get from the nurseries, directly the leaf is down, strong maiden trees; these are at once planted into good new soil, not too much enriched. If planted to replace an old tree, a hole to contain three barrow-loads is made, and filled with the same preparation. In the spring they break very strongly, and when the lower buds are bursting into leaf, I head the tree to the five lowest. Of these, when growth commences, I reserve the best-placed three, which grow rapidly, and may require a temporary stake. By the end of the season, with matured bark and ripe buds, they go to their first winter's rest. In the next spring I head them down to about 15 in. from the ground, and from the wood they send out I form my tree by a very simple process. Six stakes of any new wood are driven in round the tree (their height out of ground, 5 ft.); at intervals of 15 in., common iron wire is passed from stake to stake, and secured to each. Thus a strong frame-work is constructed, and to these wires the young shoots, from which the first fruit will be taken the next summer, are tied by soft bass matting.—G. D.

GARDEN GOSSIP.

THE depredations of the Vine pest, *Phylloxera vastatrix*, still continue to receive much attention on the Continent. Amongst the suggestions for its destruction, which come with the best attestations of success, is that adopted by MM. Monestier, Lautand, and d'Ortoman, who have experimented at Montpellier, and have successfully used the bisulphide of carbon—a very dangerous liquid, requiring great caution in its application. It is recommended to make three holes about 2½ ft. deep around the Vine, and in the holes to insert a tube, furnished with a funnel at one end. About two ounces of the bisulphide (also called sulphuret of carbon) are then poured into the tube, which is immediately corked. The vapour from this permeates the soil, and is not, it is said, like the liquid itself, fatal to the Vine, but brings sure death to the insects. In Vines examined some eight days after the treatment, the lice were found dead and carbonised; and at the end of fifteen days nothing but the effects of the lice was seen. Long and corroborative experience has demonstrated that about four ounces (100 grammes) of the liquid is sufficient for an ordinary Vine; but sprinkling on the surface must be carefully avoided. Subsequently, however, M. Lecoy de Boisbaudran has shown that the bisulphide is expensive, and also that it injures the roots, and causes withering of the leaves while they are still adherent to the green branches. This was, indeed, feared might be the case, if it was applied incautiously. Ammonia is regarded as a poison for the insect, and at the same time a manure for the plant. Another remedy, which is said to have been successful, is that of sprinkling with urine containing a little sulphide of potassium. M. Bertrand distinguishes three distinct periods in the disease, corresponding to so many years, and indicates that the insect should be attacked in the second. M. Planchon, who has been studying the insect in America, concludes that the American Phylloxera, and that destroying the Vines in France, are absolutely the same; that certain varieties of American Vines resist its attacks; and that there is an Acarus (which he thinks might be usefully acclimatised) which pursues the Phylloxera down into the ground, and then attacks and feeds upon it. In reference to its propagation, Professor Riley states that the Phylloxera multiplies agamically, and therefore produces successive broods from one impregnation.

—— MR. R. BUIST writes as follows of the new *Double Poinsettia* which has made its appearance in American gardens (see *Gard. Chron.*, 1873, 1465):—"I call your attention to a double Poinsettia—for from the dried specimen before

me. I can give it no other name. It is a towering bunch of crescent-formed bracts, at least 10 in. high and as many wide, which will, no doubt, when in the hands of expert cultivators, be grown to 18 in. high and as much in diameter. Such crowns, upon well-grown plants, will surpass everything now known for table ornament, conservatory decoration, or the manipulations of the bouquetist. On a recent tour through the grounds of Mr. Isaac Buchanan, the millionaire florist of New York, he drew me towards two plants of familiar outline, but on inspection, I discovered a plant entirely new to me. 'Is this the double Poinsettia?' I asked. 'It is; and I paid 1,000 dol. in cash for it,' was the reply. The saddle-like foliage has a more graceful outline than the present Poinsettia, the nerves of deeper purple, the petiole (foot-stalk) has two erect stipules of about a quarter of an inch high, surmounted by two glands." The inflorescence is made up of numerous ramifications, forming a compound head.

—— ANNEXED we give a list of the *Flowers Certificated at Chiswick*, by the Floral Committee of the Royal Horticultural Society, in the trials of 1873 :—

PELARGONIUMS AS POT PLANTS.

Forest-Hill Nosegay ...Rosy-salmon nosegay.

BEDDING PELARGONIUMS.

Beautiful for Ever.....Golden variegated zonal.
Colonel Loyd Lindsay ,,
Countess of Enniskillen ,,
Madonna ,,
Oriental ,,
Peter Grieve ,,
Princess Louise ,,
Circassian Beauty.....Silver variegated zonal.
Fair Rosamond ,,
Lass o' Gowrie ,,
Laura.....Silver-margined.
Golden Brilliantissima ,,
Crown Prince .....Bronze zonal.
Emperor of Brazil ,,
Freelight ,,
Golden Harry Hieover ,,
Mrs. Elliott ,,
Reine Victoria ,,
Amaranth .....Pink-flowered.
Bella ,,
Cleopatra ,,
Evans' Seedling ,,
Mrs. Haliburton ,,
Welbeck Nosegay ,,
Chunder Sen.....Scarlet zonal.
Don Giovanni ,,
Dr. Livingstone ,,
Begere .....Scarlet nosegay.
Forest-Hill Nosegay ...Rosy-salmon nosegay.

FUCHSIAS.

Alpha .....Double purple corolla.
Avalanche ,,
Blue Beauty (2nd) ,,
Victor (2nd) ,,
La Favorite.....Single purple corolla.
Crown Prince of Prussia ,,
Noblesse ,,
Rhoderick Dhu ,,
Wave of Life ,,
Weeping Beauty ,,
Avalanche .....Double white corolla.
Delight .....Single white corolla.
L'Empereur ,,
Lustre (2nd) ... .White sepals and tube.
Schiller ,,
Starlight ,,
White Perfection ,,

PHLOXES.

Le Lion .....Lilac, pale eye.
Mons. W. Bull ,,
Dame Blanche.....White, rosy eye.
Lady Hulse.. .....Rosy purple.
Roi des Roses.....Rosy crimson.
Mons. Taillard.....Rosy salmon.
Carl Kloin .....Rosy lilac.

PENTSTEMONS.

Agnes Laing .....Purplish rose.
A. St. Clair.....Red with dark throat.
Pauline Daurant.....Deep rose.
Stanstead Rival .....Carmine.

—— FROM Mr. W. Thompson, of Ipswich, we have received specimens of a fine new hardy perennial, *Centaurea americana Hallii*, which is greatly superior to the type, for while that has pale lilac-purple florets, in the new form they are of a deep magenta-purple; the flower-heads are very large, measuring, when expanded, fully 4 in. across. In light soil the plant grows from 2½ ft. to 3 ft. high. The leaves on the flowering branches are ovate-lanceolate, sessile, and comparatively small; while the colour of the flower-heads is very rich before full expansion takes place. It has been obtained from Texas, and is quite an acquisition in its class.

—— A DWARF White Celery, known as *Tuke's Celery*, was growing at Gunnersbury Park some quarter of a century since, and since that date has been grown as the Incomparable. This celery—dwarf-growing, white, very solid, and of excellent quality—Mr. Sage now grows at Ashridge to great perfection, having obtained it from the neighbourhood of Ealing, some 14 years ago. Mr. Sage grows it in beds 5 ft. wide, in which four rows are planted 1 ft. apart each way, leaving 6 in. clear outside each

plant. The plants are never tied up, the earthing being easily done by using two thin pieces of board as long as the trench is wide, each board having two pieces nailed across and pointed; these are put close to the rows and pressed into the ground, the space between being filled with soil, and the board shifted on as the work proceeds. The close stocky growth of this celery is remarkable.

—— THE note below the *Vegetables Certificated at Chiswick* by the Fruit and Vegetable Committee of the R.H.S., in the course of the 1873 trials:—

PEAS.

Laxton's Gem, a dwarf, early, wrinkled green marrow.

Laxton's Dagmar, an early, dwarf, wrinkled white marrow.

Laxton's The Shah, an early wrinkled white marrow.

Laxton's Marvel, a large-podded, second early, white wrinkled marrow.

Laxton's The Baron, a very large-podded early green marrow.

KIDNEY BEANS.

Carter's White Advancer, a dwarf, prolific, early white variety.

Cutbush's Giant Dwarf, a strong-growing second early variety, with very large pods.

Osborn's New Early Forcing, fine, dwarf, early prolific.

Carter's Dwarf Butter Bean, a variety with large fleshy pods, of a pale yellow colour.

Carter's Mont d'Or Butter Bean, a tall runner, with large, fleshy, pale yellow pods.

TOMATO.

Hathaway's Excelsior, large, smooth, round, early and prolific.

POTATOS.

Fenn's Alice Fenn, early white kidney.

Fenn's Early White Kidney, large early white kidney.

Fenn's Little Gem, early white kidney.

Breese's Climax, large round second early white.

Fenn's Early Market, large white early round, prolific.

Extra Early Vermont, early rose-coloured kidney, great cropper.

Vermont Beauty, large, smooth, flat, red; second early and very handsome.

American Pale Rose, large, flat, rose-coloured kidney; second early; enormous cropper.

—— THE *Sydney Fig*, growing at Clumber, Notts, is described by Mr. Bennett, as having been first introduced by Cardinal Pole, and planted in the park of Lord Sydney. Messrs. Lee sent it out under the above name, and from that firm Mr. Moffat, formerly gardener at Clumber, obtained it, and planted it in its present position in one of the circular fruit-houses. It is a fine variety, and the tree is of large dimensions.

—— MR. RIVERS, writing to the *Gardeners' Chronicle* about *Figs*, observes:—"I have reason to believe that I have fruited and tasted more varieties of Figs than any untravelled culturist in England, having had 130 varieties fruiting in pots, many very good, many very so-so, but all nice enough. The variations in colour and size were something remarkable. As far as I remember, the *White Marseilles* was and is the best of all; in fact, when ripened in our sunny south and a little forced, it is not to be matched, particularly when it has a small neck and a drop of honey in its reserve. The *Bourjassottes*, *Grise* and *Blanche*—from Burjasot, a village near Valencia, in Spain—are both good, as is *Barnissotte Grise*, much like the former; but then we have *Grosse Verte*, which in size and flavour is wonderful; and then *Dorée*, with its bright yellow, is a gem. Still nothing can exceed the *White Marseilles*, and I may add the *White Ischia:* when thoroughly ripe they are perfectly delicious, and the Marseilles bears two good crops in one season—one ripe in May, and the other in August."

Obituary.

—— MR. JOHN EDLINGTON died at Easton on October 9, leaving a widow and family unprovided for. He was for many years gardener to the Earl of Strafford, at Wrotham Park, Barnet, Herts; and subsequently to Sir Montagu J. Cholmeley, Bart., at Easton Hall, Grantham, Lincolnshire. He was formerly an occasional correspondent of the FLORIST.

—— MR. ROBERT FISH died at Putteridge Bury, on Oct. 23, in his 65th year, esteemed and regretted by all who knew him. His career as a gardener commenced at Scone Palace, under Mr. Beattie; but, like many young Scotch

gardeners anxious to win their way in the world, he soon left Scotland for London, and entered the garden at Chiswick House, under Mr. Lindsay. In the late Mr. London he found an attached friend, who hailed him with delight as a contributor to the *Gardener's Magazine*; indeed, as a constant contributor to the *Gardeners' Journal*, and subsequently to the *Journal of Horticulture*, he has left his mark on the garden literature of the past forty years. At Putteridge Bury, in his ordinary professional pursuits, he had a full measure of success, excelling, especially in flower-gardening, and doing much to outlive the fallacy that a good writer must needs be a bad gardener.

GARDEN WORK FOR DECEMBER.

FLOWERS.

OUT-OF-DOORS the flowers are at last almost gone. It is better so. For the last month they have yielded more pain than pleasure, struggling with difficulties; flowering to the rough, ungenial accompaniments of howling winds, driving hailstorms, suffocating fogs, nipping frosts, cold battering rains, and showers of dead and dying leaves, they have seemed a cruel emblem of living beauty bound by the iron fetters of fate to the dying and the dead. The last lingering Michaelmas Daisy has faded, the last Rose of autumn has passed away, and the last sturdy Tritoma has had its neck broken by the frost. *December* has, in a word, swept the dead and the dying into one common grave, and made a clearance of the surface of the garden. The bare earth is far more cheerful than the lingering look of the dead and fading beauty. Early decapitation inures the crowns gradually to the cold, and they get hardened to it before it reaches its maximum. Clear early, manure and dig or point the surface, as surface roughness baulks the penetrative force of the frost, and also mellows and enriches the soil; in this way early clearing and early cultivation become of the highest service. Much underground work is also done by plants this month; early bulbs and other spring flowers are preparing themselves to come forth by and by with vigour sufficient to enable them to lay their blanched or painted cheeks against the thick-ribbed ice without flinching. There is one beautiful December flower, the Christmas Rose, that ought to find a place in every garden; though perfectly hardy, the purity of its white is enhanced, and its earliness promoted, by the shelter of glass. Choice beds of *Hyacinths* or *Tulips* should be mulched with leaf-mould, spent tan, or cocoa-fibre refuse.

Continue to make new *Roseries*, or renovate old ones. The ground should be well trenched and enriched with manure. Top-dress established rose-beds or borders. Plant Briars for bedding, if not already done. Collect and sow seeds for rose stocks, or put them in earth to save a season, as the seeds take two years to vegetate. In gathering the hips, choose those of strong plants with brown bark, in preference to those with lighter rind. Finish planting all *deciduous Shrubs* and *Trees*, and also *Evergreens*, if likely to be pressed for time in the spring. Sweep up dead leaves; mow every fortnight as long as the grass continues to grow. Sweep and roll walks, and let cleanliness be everywhere apparent.

All specimen plants in stove and greenhouse should be kept cool and quiet. *Chrysanthemums* must have all the air possible, and be freely watered until the flowers are fully expanded; but a dry atmosphere is best for the preservation of their flowers. The same remark applies to *Chinese Primroses*, &c. *Cyclamens* make a charming addition to cool houses at this season of the year; and so do *Roman Hyacinths*, which are so early and so sweet, *Violets*, early patches of *Myosotis*, and forced *Primroses*.

In the Plant Stove and Orchid House, *Calanthes*, *Begonias*, *Poinsettias*, *Euphorbias*, *Justicias*, *Thyrsacanthus*, *Gesnera*, &c., will enliven this month,

while forced *Gardenias* will more than compensate for the lack of Stephanotis. The newer *Bouvardias* are also an immense acquisition at this season, alike for fragrance and colour. All roof-climbers must now be closely pruned, with the exception of *Bougainvillea spectabilis;* where it is used for this purpose, it continues to flower gloriously throughout the winter; and the *Tacsonia Von Volxemi* also goes on very late, if it can have a temperature of 50°. A forcing-pit or house should be available in all gardens for bringing on *Roses, Lilacs, Rhododendrons, Hardy Azaleas, Deutzias, Bulbs,* &c., to flower in the drawing-room and conservatory: a temperature of 55° to 60° is needed for this purpose. Cold pits and frames full of *Bedding plants, Florists' flowers,* &c., should be kept as cool and as dry as possible. Exclude frost and damp, and in watering the plants see that the roots only are wetted, and that leaf and branch are preserved dry.—D. T. Fish.

FRUITS.

In-doors.—*Pine Apples:* The entire stock will require careful attention at this season. For plants now swelling their fruit attend to the directions given last month. The plants intended for starting next month should still be kept at rest in a temperature not below 60° during the night. Keep the succession plants in all stages steadily moving, and in frosty weather use coverings as much as possible, in order to obviate the necessity for too much fire-heat, which, in the absence of solar light, weakens the plants; give air at every favourable opportunity, and see the bottom-heat does not fall below 80°. *Vines*: Gradually raise the temperature of the early-house to 60° by night and 70° by day, with an increase of 12° or 14° by sun-heat; attend carefully to the tying-down of the shoots, and remove all superfluous ones; give a little air, whenever the state of the weather permits, as early in the morning as possible; avoid keeping too moist an atmosphere, which is decidedly wrong at this season of the year. The directions given last month for the early house will apply to the second house, which should be started this month. All vineries containing ripe grapes should be kept as dry as possible, without using too much fire-heat; examine the bunches frequently, and cut out all decaying berries. *Peaches* and *Nectarines:* If not already done, start the early house at once; give the inside borders a good soaking of water, and follow the directions given last month. If not already done, prune and dress the trees in the late houses; in mild weather give all the air possible, but in frosty weather it is better to close the lights. *Figs:* If these have not been pruned and dressed as recommended last month, the present is a good time to do it; also to shift any plants that may require a larger pot or tub; use a compost of turfy loam and rotten dung, and press the soil firmly in potting. In mild weather give plenty of air, and in severe weather use sufficient fire-heat to exclude frost. *Cherries:* The first batch of plants should now be under glass; let them have plenty of air when the weather permits. *Strawberries:* Introduce the first batch of plants for forcing. At this season they cannot have too much light; they should therefore be kept close to the glass. They may either be put on shelves where they can have plenty of air, or plunged in a bed of leaves in pits until they begin to grow. Take care the plants in winter quarters do not get frozen, on any account.

Out-Doors.—Proceed with the planting of *Fruit-trees* of all kinds in mild, favourable weather. In planting see that the roots are carefully spread out, and that the soil is put in properly about them; cover the roots afterwards with a good mulching of half-rotten dung, and secure all standards properly to stakes. Persevere in *Pruning* and *Nailing* wall-trees in mild weather, as it is very desirable to get as much of this work completed before Spring as possible;

on no account, however, should it be attempted in cold, bitter weather, as the labour then can otherwise be more profitably employed. If not already done, put in cuttings of *Gooseberries* and *Currants*. Keep the fruit-room dry and cool; examine frequently the store of fruit, and pick out all decaying ones.—M. SAUL, *Stourton, Yorkshire.*

VEGETABLES.

TAKE advantage of any fine dry days during the earlier part of the month to bring the earthing-up of *Celery* to a close; it will be necessary to bank up more permanently now, than was needful in the case of early crops, as a protection against severe frosts. Should a severe frosty period set in during this month—and it may be anticipated at any time between the 20th and 30th—place a layer of long stable litter, or what is better, cut-and-dried Bracken fern, along the rows upon either side of the green tops. Similar coverings should also be placed amongst, and slightly over, the tops of *Autumn Broccoli*, of the Walcheren and Snow's types. It is judicious also to place a little over beds of *Horse-radish*, *Parsley*, *Radishes*, and early autumn-sown *Carrots* intended for midwinter use; also over *Parsnips* and *Jerusalem Artichokes*, in instances where a sufficiency of either has not been housed, which is a desirable practice in regard to the latter, but not of the others, if it is desired that each should go to the table in the freshest and tenderest manner possible. I would particularly advise the discontinuance of the practice embodied in the taking-up of *Parsnips* and storing them away dry, or moderately so, through the long winter; they always eat fibrous in consequence.

Attend very carefully to the artificial warmth which may be engendered by means of fermenting materials over beds or plantations of *Seakale* and *Rhubarb*, seeing that even slight fluctuations of temperature influence the heat thus generated. Too great a heat leads to scalding the crowns, the rotting of which not only destroys the present crop, but materially injures the stools for a long time after. Those who possess a Mushroom-house may economise time very materially in this respect by taking up the crowns, and laying them into soil in a dark corner therein, and in such a way that fresh outer air cannot penetrate to the young blanched growths, which would cause them to grow green, and no possible effort would then cause them to blanch properly. Secure *Potato*-pits or houses, *Apple*-rooms, &c., permanently against frost. Place roots of *Mint*, *Tarragon*, and such like *Herbs* into pans or boxes for forcing, that a supply may be had when wanted. Make up successional beds of *Asparagus* as frequently as the demand requires. Where early Horn *Carrots*, *Radishes*, *Potatoes*, &c., are in demand at the earliest date possible, the necessary fermenting materials should now be turned over periodically, in order to sweeten them, in readiness for finally making-up the beds. Heaps of strong manure should be turned over once in about five days, at least three times in succession, and exclusive of the final making-up of the bed, which must remain for settlement, and for the rankest of the steam and heat to pass off, before any attempt is made to plant or sow thereon. Give air constantly during mild periods to *Cauliflowers* and *Lettuces* in frames, and make successional sowings of small Salading and *Dwarf French Beans*.

Wheel all kinds of *Manure* and garden refuse on to vacant spaces during hard frosty weather, and when the ground is in such a state as to admit of cleanly walking over all the parts. Trench all such plots where this latter has not been done for the last three or four seasons, placing at the bottom of the trenches the greenest and most lasting manures or refuse. The *Walks* should also have attention at this season of the year; re-gravel, or turn the gravel, in the case of all such as need these attentions, and during mild periods relay *Box* edgings where necessary. Keep young crops free from weeds.—WILLIAM EARLEY, *Valentines.*

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