THE

FLORIST AND POMOLOGIST,

AND

SUBURBAN GARDENER:

A PICTORIAL MONTHLY MAGAZINE

OF

FLOWERS, FRUITS, AND GENERAL HORTICULTURE.

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THE

FLORIST AND POMOLOGIST.

RHODODENDRON METEOR.

[Plate 529.]

AS a hardy, ornamental, flowering shrub, the Rhododendron or Rose-bay may almost aspire to dispute the place of honour with the Rose, though she is recognised as the queen of flowers. True, the flowering season is shorter, but it is glorious, and of fair duration; true, the blossoms are scentless, but they are gorgeous in the brilliancy and enchanting in the variety of their colours. On the other hand; the plant is presentable—a handsome evergreen bush—throughout the whole year, if due care be taken to select from the many varieties which have that most desirable quality of bearing bold and ample foliage, and retaining it sufficiently long to keep the branches well clothed. The habit of the best varieties of Rhododendron is dense and well furnished, and when large bushes in considerable quantity are seen, dotted over with their noble and many-hued flower-trusses, the rich pictorial and startling effect is utterly beyond the conception of those who have never witnessed it.

Amongst the varieties of Rhododendron which can be recommended for their brilliancy of colour, is that called Meteor, which was raised by Mr. Anthony Waterer, of Knap Hill, near Woking, to whom we are indebted for the opportunity of figuring it. In this case, both the leaves and the flower-head have been somewhat reduced to come within the compass of our page; but enough is shown to indicate the broad, flat, deep-green foliage, and the large, compact trusses of flowers, these being amongst the brightest in colour which have been hitherto obtained—a carmine-scarlet, which in the sunshine is almost dazzling, and which is very fairly indicated, though by no means actually reproduced, by the accompanying example of chromolithography. When to this brilliant colour is added the relief afforded by the spotting of the upper segments, and the high qualities of size combined with first-rate form and substance, the result is a variety of great intrinsic beauty and merit, a novelty which can honestly be recommended as forming one of the most striking ornaments of the American garden.—T. Moore.

TULIPS—CLASSIFICATION: CULTURE.

TOWARDS florists with their own particular flowers, grown less to make a garden gay than for their own intrinsic interest and fascinating beauties, the whole Floricultural Press is so kindly disposed, that though we are—perhaps because of our fewness and isolation—no longer in possession of our own little works, such as so largely were the *Midland Florist* and the *Gossip of the Garden*, yet no florist need lack an outlet for his inquiries, information, experience, joys, and sorrows. To go no further than these kindly pages, The Florist is more than "Midland;" and Mr. Hepworth, writing about our Tulips, still loved with all the ardour of old times, though the wide floral world may not have lately noted it, makes me glad to join in the Tulip-talk with him.

Since we can remember Tulips, though he is a generation older than I, and Samuel Barlow, an elder brother, the White-Ground classes have risen with sharper contrast from, and among, each other; while the Yellow-Grounds, the Bizarres, have developed into two well-separated sets of marking, red and black.

In purity, shape, substance, colour, and decision of marking, all are much more near their projected standards of perfection. We have brighter scarlets in the Roses; and in the Byblœmens nearer approaches to the violet, chocolate, and black of this difficult and remarkable type; and purer whites in both. In these classes, all this has helped us to keep clear of those beautiful but perplexing flowers, the Rosy-Byblœmens, a marginal class in which a flower, opening not quite scarlet

enough for a Rose, never continues in one stay, and dies not quite dark enough for a Byblœmen. This confusion seems due to a mixture of red and violet shades. Where blue tints blend with black, as in a flower like Hardy's Talisman, the flower is a good Byblœmen; and where the red is brightened, as in vermilion, the resulting searlets form brilliant varieties of the Rose class, such as are Modesty, Annie McGregor, or a feathered break of Kate Connor. (O, brother Barlow! let me treasure here the memory of the loved and only one that you and I ever had, and that was killed in an accident on a journey!)

There can be no doubt but that progress will continue to reward thoughtful perseverance with seedlings, and that, with flowers of the best form, will come the white that needs no bleaching, and colours of ripe intensity from the first.

I quite agree with the veteran Mr. Hepworth, that the Bizarres, the yellow grounds, have proved themselves deserving of the honour of distinction into two equally-valued classes, by virtue of the magnificent contrasts between our best bright reds, such as Storer's Dr. Hardy and Orion, and the raven-black of Masterpiece. This seems a natural division, which we only embarrass ourselves by ignoring. It is a distinction fully recognised in the Carnation in the difference between its searlet and crimson bizarres; but in the Tulips it remains a difficulty, and one which a judge may keenly feel before two flowers running one another so close, that he may see no point for his decision but his own private preference for this or that colour in the flame and feather.

Points should be founded on settled merits, and not on floating tastes.

The scope for a grower's individual likings lies in his home collection. There, in the sanctity of his own garden, he may, if he be enough one-eyed and colour-blind, banish from his Tulip-beds the Scarlet Bizarre, and confine himself to nothing but black velvet in the ground-colours of his edged Auriculas; but no such preferences should weigh in public against flowers that add to high worth in other points the very valuable one of some decided fresh break in colour.

In the shape of the florist Tulip, there are several important properties besides the correct shortness of the cup, such as breadth, smoothness, and substance of the petals, and their evenness on the edge, and in their height. Where these are well combined, a little, and sometimes a good deal, of deviation from the standard length of the cup is practically allowable still. There are flowers at the Royal National Show, both old and new, that are certainly long in the cup; and we have had to bear with these, encouraged, however, by fine seedlings from such raisers as Dr. Hardy, Luke Ashmole, Storer, and others, flowers that show great advancement in this supreme point of form.

Planting-time has come and gone again. No one need fear for the welfare of his bulbs who can consign them to deep beds of strong, turfy, yellow loam. The Tulip naturally roots afresh about the third week in September, and therefore by the middle of October it begins to show evident signs that it longs to be underground. Where the beds are in no way protected, this is generally a safer month for the work than November, beyond the earlier part of which the operation should not be delayed. But planting is not such a matter of punctuality as taking up should be. Not that, like tubers of the Ranunculus, the Tulip is in danger of rooting again soon after dying down, but that there is certainly a happy moment for harvesting these bulbs during their closing life above ground. If taken up as soon as the stems will bend double without a sharp snap, and the foliage tips show that the sap is ebbing, it will be found both that the young bulb is perfectly formed, and also that though it may appear white enough to seem naked save for the worn-out shells of the old root, yet it is not really so. Its outermost layer is an exceedingly fine skin, which now will ripen closely round the young bulb, with most perfect fit and finish, and will encase it, for the whole period of its outward rest, in a bright transparent wrapper, apparently air-tight, and therefore of great use in keeping the bulb from loss by evaporation. But if the work of taking up be delayed till this stage of maturity is past, this protective covering thickens and darkens, and with the drying of the bulb will readily split and peel off. It is best to dress them over as soon as the old shells and old fibres are perfectly withered and dry, keeping off-sets, if possible, at their mother's side, or sheltered, if naturally loose, in one of the old shells in which they often lie.

The bulbs are thus safer to handle than if left in the rough until planting-time, by which period the work of forming the future leaves and bud is far advanced; the bud indeed having all its parts, though in curious immature proportion, the anthers as yet being larger than the petals. All this work is done while the bulb is outwardly at rest (between June and September), and so completely, that at the side of what will be the flower stem, there may even be seen a tiny germ, which is to be the bulb of the next year's harvesting. None of all this beautiful process is discernible amid the fleshy folds of the newly-ripened root. It is the work of very quiet days, and so we see that even in the dry, dark cells of the Tulip cabinet, the Tulip bulb has led no idle life.

Suggestively enough, its very shape has changed, particularly at the base, where the crown, the very centre of its life and sensibility, has protruded through the light-brown skin, till the points of all the waiting fibres are visible, and when any bruises or roughness of touch may fatally injure them. There is also the yellow beak of the first young leaf, but an injury to that short upward shoot is as nothing to the effect of any accident to the base of the bulb.—Francis D. Horner, *Kirkby Malzeard, Ripon.*

PEAR BEURRÉ MORTILLET.

THE Beurré Mortillet Pear, observes M. Carrière, in the *Revue Horticole* (1879, 395, fig. 81), is one of the best of its season, its only fault being that of ripening too early; and this, indeed, is scarcely a fault, since the large and good sorts are at that time scarce. It is a new Pear, and was raised by M. Fougère, of Saint-Priest (Isère), some five or six years ago, from a pip of Williams' Bon Chrétien. It was first described and figured in 1878, in the *Sud-Est*, by M. Mortillet, nurseryman, La Tronche, near Grenoble, who describes the fruit as very large, pyriform, swollen in the centre, and varying in weight from 14 oz. to 15 oz. The skin is of a tender green, sometimes slightly flushed with flesh-colour on the side next the sun, dotted over the surface with rather large red dots, and shaded with reddish-russet around the stalk, which is short, fleshy, and set in a very small, irregularly-nippled cavity. The eye is small, closed, and set in a rather deep, somewhat ribbed basin. The flesh is white, fine-grained, buttery, and very melting, with abundant juice, which is sugary and agreeably-scented. It is ripe during the latter half of August.

According to M. Mortillet, the tree, which is vigorous in growth, is pyramidal in habit, accommodating itself both to the quince and to the pear stock. The wood is lenticelled, and resembles that of Beurré Clairgeau, but is more vigorous; the leaves are large and thick, and the tree is remarkably fertile, the fruits commonly growing in clusters, in which case the stalks become obliquely inserted. One of the fruits of the crop of 1879 weighed about $1\frac{1}{6}$ lb., and came from a fully-exposed tree.

M. Carrière adds that the fruits he examined measured $4\frac{4}{5}$ in. in height, and about 4 in. in diameter, and by their shape and appearance rather recalled those of the Duchesse d'Angoulême, but were superior in quality, on account of their finer-grained and more juicy flesh. It is a variety which all lovers of fruits will be bound to procure.—M.

FRUIT-TREE LIFTING AND ROOT-PRUNING.

THIS subject crops up more or less every season, and one would think, from much which we read, that a deal of matter regarding the theory and practice of root management has been written in vain. It is to be feared that in the hands of some, root mutilation and injury to the trees has been all which has been achieved; and no wonder, when the indiscriminate chopping mode has been practised, whether the trees required checking in their growth or not. It need hardly be remarked that when a tree has reached the size desired, it should not be allowed to increase—for the largest sizes are not the most profitable, as it is not timber one wishes, but little growth and abundance of fruit. Were it indeed the growth of oaks, ash, beech, &c., for wood, instead of apples, pears, plums, and cherries for fruit, we should adopt an opposite course. We should drain thoroughly for all, but for the forest trees extra trenching, depth of soil to the roots, and facilities given to let the roots run and take possession of all available space, instead of encouraging the production of acorns and other seeds, would prevent it as far as possible.

In the case of fruit-trees, we wish the growth to be short and firm, with an absence of pith, and showing a disposition to form fruit buds.

When symptoms of grossness appeared, with strong, sappy shoots growing rapidly upwards, we should (during the growing season, if opportunity offered) search for the cause of this gross growth, and should, most likely, find some of the roots going down rapidly from the influence of sun and air. These, if possible, should be brought to the surface, or very probably must be cut clean off, and some lime rubbish mixed with the soil, and rammed firmly under the trees from whence they were removed, in order to keep others from going in the same direction. If the tree continued to misbehave, further liberties would be taken to bring it to a standstill! If this were done, say, between June and September, the roots would have plenty of time to heal, and probably, as has often been observed, would throw out a number of fibry roots, which would be conducive to the limitation of growth, and the formation of fruit buds. A mulching placed over the roots would then induce them to grow to the surface, where more sun heat would reach them, and the quantity, quality, and appearance of the fruit would be greatly improved. We have seen Apples and Pears entirely changed in character by such treatment, and their roots being kept in such healthy positions, canker and other diseases became unknown.

When trees are well treated from the first, their constitutions are proportionately sound, and trouble in their management is proportionately less. It is not the roots which extend over the upper surface of soil one is afraid of, as leading to canker, unfruitful growth, cracked and badly-coloured fruit, &c.; but those which strike downwards into cold, damp subsoil, or, it may be, into that which is poor, inert, and sandy, which is always a precursor of canker or barrenness.

The system of manipulation of the roots which is too often adopted is a cutting of the best of the feeders all round at a certain distance from the trunk, leaving the downward growers alone. Nothing could be more mischievous than such a practice, especially when rich, stimulating soil is thrown into the trench cut round the tree. The growth is again excited, and the downward roots are driven harder to their work by the loss of the surface-roots, so that the last end of the tree is worse than the first. If, under such circumstances, the course of the tap-roots were diverted by their running against stones or other impenetrable substances (well described in a contemporary), little harm would be done; but it is the doing of the one thing, and leaving the other undone, which leads to disappointment.

Instead of dilating on the manner of how or how not "to do it," I will offer a few notes from practical observation, taken during the course of many years, and in districts widely separated.

In a well-managed garden in Middlesex, where I was employed as under-gardener, a Plum on a wall was judged unworthy of a place among the other well-trained trees; but I thought by pulling the branches to the thin side to balance the tree, it might be worth its room. While engaged at this, by the help of another, the surface-roots were snapped from the under ones; they were carefully covered, and the branches trained as a fan. In the course of time, this tree became very handsome and fruitful, and was greatly improved by its mishap at the roots, showing that by being rid of those down in the cold, it turned its surface-feeders to good account, where they could be encouraged to root upwards, and influenced by the warmth of the sun.

In Wiltshire, I know of a garden which had been well planted with all kinds of fruit-trees, but in which, however, having found their way to cold clay subsoil, canker was appearing, along a with coarse growth, which never ripened. Most of the trees were very large, and scarcity of labour-power forbade the lifting of them; but the tap-roots of many were cut off, the surface ones were well supplied with fresh turfy soil, and the result was a cure of canker, and the production of plenty of fruit, instead of wood and leaves only. Some Pears, which were lifted from a wall, the roots extracted from the clay, and the whole laid out evenly into the well-prepared border, produced during the first season scarcely any wood or foliage,—in fact, some of them looked as if they were dead,—but the effect on them was that the semi-dormant fruit-buds revived, and became converted into healthy fruit-bearing ones, so that they paid well for the amount of labour taken with them. The border was 300 ft. long, or more, and to lift the whole of the trees, which had been established many years, was no trifling matter, with half-

labour-power to keep the place. I pass over years of lifting and transplanting old and young fruit-trees, Vines especially; but in every case I found real benefit from bringing the roots upwards, well mulching them from drought, and preventing any from getting to the subsoil.

It is with a distinct recollection that I can record an unpleasant case connected with the severe root-pruning of a number of Pears. In a nobleman's garden, where a good collection of Pear trees was established on a wall, the soil being good, but the climate rather cold and severe, the trees always grew late in the season, and became too gross to be expected to ripen their wood, and consequently disappointment had to be endured over and over again. The gardener, an experienced and clever man, set about lifting the whole of these trees, root-pruning them at the same time. The result was that they scarcely showed more than leaves the following year, and the noble proprietor, in disgust, at the end of the season discharged his worthy gardener, and engaged another, also an experienced man. The latter took advantage of his opportunity, and in the following spring an abundant show of blossoms appeared. The crop set amazingly, and was judiciously thinned, while the roots were mulched and watered with guano-water several times during the season. The result was the production of about the finest lot of Pears seen in the district. From that garden excellent collections of Pears have been exhibited, and for anything that I know to the contrary, fine fruits are still grown by the same gardener, who has for upwards of thirty years, in the same place, won a name and fame as a clever grower of hardy fruits, and of Pears especially.

My opinion regarding the doctoring of roots to cause fruitfulness is, that the extreme practice of some, brings discredit on the system. Root-lifting, when performed judiciously, has been known to entirely change the character of fruits, so that they could scarcely be recognised because of their excellence; but the mutilation of the roots, even when cut cleanly with the knife, should be looked on as a necessary evil, and done tenderly. For nearly twenty years I have adopted the piecemeal system of lifting, cutting back with the knife those roots which were without fibre; and to have the tree in good health, laden with fruit, the following season, I have performed the work between June and September, first lifting one side of the tree, and when the roots had taken fresh hold, and emitted a mass of fibres, doing the other side. In this way, before the leaves fell, abundance of knotty, natural-formed spurs were studded all over the branches. Last July we half lifted some hundreds of trees, Apples, a few Pears, Plums, Apricots, Peaches, and Morello Cherries. We only lifted both sides of a few trees, for the half-lifting and clearing away their tap-roots arrested growth, and had the desired effect. I find that I have a long list of notes on root management, especially on the piecemeal system carried out when growth was active, and in every case the work has been attended with the greatest success. Figs, Vines, and Plums have done exceptionally well by this treatment.—M. T.

PERPETUAL FLOWERING, OR TREE CARNATIONS.

IT would be no loss to drop the term "tree," as applied to these plants; or, more correctly, it would be a gain to drop the form of growth that has given rise to this appellation. It is scarcely possible to imagine anything in the shape of a pot-plant uglier than the tall, scraggy deformities that used to do duty wherever these beautiful flowers were grown. When the market-growers took them in hand, they soon gave up the cultivation of these tall plants, with their attendant long sticks and close-ties, and either confined themselves to young stock, or headed the old ones down in the spring, after blooming.

Notwithstanding that these Carnations combine almost every desirable property that goes to make up a valuable flower for autumn, winter, and spring use, they are not so generally grown in private gardens as they deserve to be. I find that many who have not grown them imagine them difficult to cultivate, associating them in this respect with the Florists' varieties, which, in common with all other things cultivated by Florists, are *supposed* by numbers of people to want more attention than ordinary gardeners can bestow. This is, at least, so far a mistake, that few plants are more easily managed than these Perpetual-blooming Carnations. If the cuttings are struck early enough in spring to admit of the plants attaining their full strength, and they receive a fair amount of attention during the summer, so that they do not come to a stand-still for want of pot-room or water, with the help of a low house or pit where they can be kept near the glass during the time they are being brought on into flower, they are about as certain to succeed as any

plants that are taken in hand. The varieties that have been raised of late years, especially M. Alegatière's seedlings, are remarkably dwarf in habit, and, along with the fine kinds produced in this country, are generally good growers.

By providing a sufficient number of plants to admit of their being brought on in succession, a supply of flowers may be kept up without intermission from autumn till late in the spring.—T. BAINES, *Southgate.*

ROASTED TURF.

AT this time of the year, when many of our garden plants are reposing under ground, we cannot do better than prepare composts to be used in the coming spring, when all will be activity, and the day all too short for the work to be accomplished. Peat, loam, and sand will certainly be wanted, and these in good condition. Peat is a ticklish article to deal with, for when it gets quite dry, it will not take water when water is offered to it, and thus many heaths and other peat-earth plants die from want of moisture, although water skin-deep is supplied to them freely. This is not the case with the other ingredients, for sand is open like a sieve, and loam will take water slowly, especially when sand is mixed freely with it. Every one seems to know when his plants want water, but it is not an easy matter to tell when they want dryness. Young fruit-trees and roses will take little harm, if kept out of the ground for a short time. My father used to say there was a time when dryness did no harm to such plants, provided they were shifted in season, and well treated afterwards.

In modern gardening, we get Cucumbers and even Grapes to come to perfection in one or two cubic feet of earth in a pot, the plants being supported by regular waterings with manure-water. But the amateur asks, what is manure? for he has seen filth on the pots which could not be endured, and could not be necessary, since the roots were below and the manure above, and mud more or less watery, though good enough for a pasture field, is not suitable for in-door plants. The late Mr. Barnes (of Bieton) excelled in the manufacture and use of manure-water. He passed it through charcoal, so that when he applied it to his plants it was as colourless as clean water, and his success in this way was known to most gardeners.

Some years ago, the sale of Roasted Turf was mooted, and instructions were given to provide an iron plate, mounted on four brick ends, for the purpose of preparing it. The turf to be roasted was laid on the plate of iron, but the whole thing was too simple and insignificant, so that it fell into desuetude as a broken toy. Clay when burnt is clay no more, and when fields are pared and burnt, the ashes may be useful; but earth burnt to a cinder would be no compost for plants by itself. Peat-ash from a cottage, that has had all the waste from the house cast on it, may be, and surely is, good manure for such crops as Cabbages and Turnips, but it is not suitable for being seen above ground, and is best buried.

The idea of roasting Turf was good, but it had to be grappled with practically, for unless the Cucumber or the Vine had thirst or need of water, it would be useless to offer it. The Roasted Turf, however, is an open medium, permitting the roots and the manure-water to permeate the ball, and yet admitting repeated doses, without choking the medium in which the feeders move. On a piece of waste ground I got about 10 cwt. of old turf from a field, and built it up, turf only, like a hayeock, leaving two small openings at the bottom to light the fire and, if necessary, to regulate it, the inside being filled with branches and a few shavings, to set the fire agoing. The flush of firing was soon over, but the embers and hot walls kept warm for some time, so that any wireworms or the like would have warning to leave the premises, for all creatures, small as well as great, know the character of fire, and flee from it. A few rough stakes supported the roof, and the whole was a close building, with a smouldering fire. There was no smoke of coals, and the wood used made very little smoke. However, the sods were packed, so that they were neither raw nor burnt, but roasted; and when manure-water was applied, the action was effective, for the plants were fed with water, and not with mud, and that water was medicated with no stint of manure. I need scarcely remark, however, that Vines in pots cannot do with much manure-water when the fruit is ripening. With a hatful of roasted turf, the amateur has got the matter in his own hands, for, with Barnes's clear liquor, and these fine open sods, the thing will be set agoing; and who is there that would not wish, when the "shades of evening close over him," "to sit under his vine?"—ALEX. FORSYTH, *Salford.*

W.H. Fitch del. Grape Gros Maroc. P. De Pannemaeker, Chromolith. (Gand)

GRAPE GROS MAROC.

[PLATE 530.]

THIS very fine and remarkably handsome Grape, sometimes known by the synonymous name Marocain, has been singularly slow in attaining the position amongst high-class Grapes to which its merits entitle it. Introduced by the late Mr. Rivers, in 1855, from M. Vibert, of Angers, it has been almost unknown until the past year or two; but, thanks to the present Mr. Rivers, it now comes to the front, and bids fair to take its place as one of the best late Grapes for market purposes. The examples grown by Mr. Rivers during the past two years, some of which gained for him a First-class Certificate from the Royal Horticultural Society in November last, have been very fine, as is fully borne out by our illustration, which has been very accurately drawn by Mr. Fitch, from a noble bunch kindly communicated for that purpose from Sawbridgeworth. The variety is also grown to some extent by Mr. Ward, at Bishop's Stortford, who speaks very highly of its merits.

The *Bunches* are medium-sized, strongly shouldered, with a stout stalk. *Berries* large, ovate in shape, of a very dark plum-colour, with a thick bloom. *Flesh* firm, yet juicy, with a very brisk, sprightly flavour, exceedingly pleasant. It succeeds admirably when grown under the same conditions as Black Hamburgh, and ripens about the same season. It is recommended as a very late-keeping Grape, and from its handsome appearance it cannot fail to be a great favourite. In constitution it is very robust and stout, after it is fairly established; but it is somewhat difficult to propagate. It is tolerably prolific, and sets freely. This Grape has been much confused with Gros Damas Noir, and Black Morocco, from which it is, however, perfectly distinct, and to which it is much superior.—A. F. B.

THE CARNATION AND PICOTEE BLOOM OF 1880.

THE abnormal conditions of growth in 1879 left pitiful impress of their character on the plants and bloom of 1880. Nothing less could have been expected. A season sunless beyond all experience, and wet beyond all record—which ripened no sap, and which, again strictly in accord with Nature's laws, was followed by frost so lengthened in duration and intense in its character that subjects ordinarily regarded as hardy perished wholesale, even in localities favourably circumstanced, and which in my handicapped situation brought death to my Lilies, Laurustinus, and Deodar—could not be hoped in passing to grant immunity to Carnations and Picotees.

With the earliest opening of the spring, the plants, dulled and depressed with the excessive rains of the preceding summer and autumnal months, rallied in a fashion very gladdening to an admirer's eye, and for a while there was much promise of a growth which might seem to scoff at fear, and turn doubt and tremblings into joy. But as time wore on, in plant after plant the evil of unripened sap was only too surely developed, and never in my experience was so large a per-centage lost from this cause as in the season now past. When, again, the time of bloom had come, the evil was grievously manifest in the marred edges and blurred and imperfect markings—in some cases, the almost absence of colour in the flowers. Nor was this confined to a few varieties of an exceptional or crotchetty character. It was notable in varieties of unimpeachable constancy and most highly developed properties. In Carnations, Curzon suffered severely; and in Picotees, Zerlina—of which, previously, I had never seen an inferior bloom—was, from the finest plant I grew of it, so rough that, set in steel, it might have served for a ribbon saw.

Another indication of the abnormal character of 1879 was its effect upon the seed. This is a branch which has always had a special interest for me, and despite the unpromising nature of the weather, the pollen-pencil was kept in constant use. Up to the very end of the year the seed-pods gave little signs of ripened seeds, but when at length they were shelled and sown, the germination and growth were far beyond my expectations. When, however, high summer came upon us, the absence of stamina in the seed was only too apparent, and our per-centage of loss was far larger than usual.

My readers will not, however, imagine it was all cloud. As I go again in imagination around and around the stages—a retrospect that very regularly fills my hours of leisure—I see group after group of flowers of the greatest excellence, a few so rare, that neither hope nor desire can anticipate more glorious development. Many years have passed since I wrote, "A Derby man would have a very special pleasure in looking upon a flower which shall surpass

the grand old Curzon," and I yet retain the opinion that the development of the Carnation will never be carried higher than as seen in Curzon, in its very finest character. But it has been permitted to me to look upon a flower glorious as Curzon, and on several, I think, worthy satellites of such a grand old king.

Curzon itself, despite the imperfections of some of the flowers, as already described, was probably never seen in the South in better character than as shown by me at South Kensington, on July 27th; whilst the small bud with which Mr. Charles Turner obtained the first prize for single specimens, probably the smallest flower Mr. Turner ever showed in his life, was absolutely perfect in marking, colours, and quality, illustrating forcibly the influence such properties possess in the estimation of highly-trained and educated judges.

Like Curzon, Mars, a son of that famous old sort, was grand in character, getting more refined and purer in the white ground as it advances in years. Mercury, from some cause or causes quite beyond my ken, is not with us nearly so good as Mars; and Sir Joseph Paxton, excepting from one plant of eighteen, was quite a failure. Wm. Spoor, sent out by Mr. Adams last year, is very smooth, well formed, and bright in colours. But it has a drawback, seen in a larger degree in the bloom of 1879 with Mr. Douglas, certainly—the colours in many petals in the great majority of its flowers, instead of being distributed in bold stripes against a sharply-defined clear white, melt, in florists' phrase, into the white, giving to the latter a pinky hue, very detrimental to the position the variety would otherwise occupy in its class. These varieties, excepting only Dreadnought, which is so completely the "double" of Curzon, that what is said of one may be said of the other, were all of the older varieties that call for any notice, so far as my collection is concerned; but as I had some thirty seedlings under trial, there was no lack of Scarlet Bizarres to give colour to the stages. Several of these have been distributed to my confrères during the past autumn, and of these I will only remark that if they bloom elsewhere as they have done with me, they will satisfy the description I gave of them.

In Crimson Bizarres, two varieties sent me by Mr. W. M. Hewitt, of Chesterfield, named respectively E. S. Dodwell and Master Fred, are certainly destined to occupy a very high place in the class. Mr. Hewitt reports the former as a seedling from Mars S.B., or Curzon S.B., but whether from one or the other, it is clear, as is almost invariably the case, the pollen variety (whatever that may have been) has exercised a most potent influence, changing the colour and habit of the grass with the colours of the class. Master Fred, a seedling from Captain Stott, fertilised with pollen from Rifleman, is the highest-coloured Crimson Bizarre I have yet seen, unquestionably the best of the higher-coloured flowers. At South Kensington on July 27th it was placed second in the seedling prizes to Mr. B. Simonite's Crimson Banner, shown by Mr. Douglas, the only award in that large exhibition which did not commend itself to my judgment.

At the Manchester exhibition (where Master Fred won first, second, and third prize in its class, securing an award for each flower exhibited, and was premier bloom of the show), I saw some fine seedlings shown by Mr. Gorton in this class. William Skirving, the only one named, is probably the best of the batch, though all are good, and is a flower of great refinement, with rich colours very distinctly defined. The good, old-established sorts—Captain Stott, Colonel North, Eccentric Jack, J. D. Hextall, John Harland, Lord Milton, Rifleman, and Wm. Murray, respectively—gave us many fine flowers, (though, as in all the classes, several suffered grievously from the effects of the untoward '79), and should all be grown where fine show-flowers are required. With me, the two best of the group are Rifleman and J. D. Hextall, which, all points considered, I bracket as equal; then, in a second group, I place Captain Stott, John Harland, Lord Milton, and Wm. Murray; and in a third, Colonel North and Eccentric Jack.

In Pink and Purple Bizarres, Sarah Payne, as always, was "purity personified." Unexpected, Turner, is a grand show sort, undoubtedly the best of the class; and Purity, grand in form and quality, and often glorious in its markings, is indispensable. To these of the old-established sorts, James Taylor may be added.

At Manchester, Mr. Hewitt showed Sir Garnet Wolseley, a seedling from P. F. Mayor of Nottingham—a very attractive flower, like its parent very boldly and distinctly marked; but a pink and purple which, if constant, will, I think, be very desirable.

Purple Flakes are a limited class, but very lovely. Dr. Foster, Florence Nightingale, James Douglas, Mayor of Nottingham, Squire Meynell, and True Blue are very distinct and very beautiful, and should be grown in the most limited of collections. Never in my life had I finer examples of lovely flowers than in Dr. Foster, Florence Nightingale, and James Douglas, ten days before our show. A sport from Sarah Payne, far more intense in colour than the Sporting Lass, sent me some three years since by friends in the North, with its rich contrast of deep purple and pure white, was also most beautiful.

Scarlet Flakes in my collection are yet more limited. Annihilator, Clipper, Dan Godfrey, James Cheetham, John Bayley, and Sportsman complete my list. Of these, Sportsman is the best; John Bayley following very closely in its wake, and the others a group of great

merit. From each, despite the grievous seasonal influence apparent in certain of the plants, we had flowers of great merit; and these, with a round dozen of seedlings, made the stages dazzling with their bright and brilliant colour.

Rose Flakes, always a lovely class, were lovely indeed in their character. Than Sibyl and John Keet—or John Keet and Sibyl, which should I place first?—nothing more beautiful could be imagined. Keet, from its open succulent habit, had suffered terribly from the rot, born of unripened sap, three-fourths of the plants potted for bloom going down before it, but the plants spared brought blooms which made the variety seem doubly dear; whilst in Sibyl we had a magnificence of flower, I have never seen surpassed. Other good varieties are Cristagalli, James Merryweather, Lovely Ann, and Mrs. Dodwell—the latter fine, but too early for the general bloom.

And so we come to Picotees, always very special pets of mine, as the feminine of the tribe, lovely, graceful, winning beyond all denial, though we do feel and teach now and again that greater beauty and higher development are to be found in the masculine force of the Carnation. But the Picotees are the very Peris of a floricultural paradise. Alas! that I should have to say I do not now succeed in their development in the same degree and with the ease and facility given to me at Derby. Our smoky, sooted atmosphere taints their clear, white grounds, and the dry air pales the delicate colours, and prevents the attainment of size far more markedly in the Picotee than in the Carnation, and I greatly fear cultivators circumstanced like myself can do little to redress the ill. But there is one advantage, and it is a weighty one, though balanced with many and grievous ills, which, perhaps, I may mention here; this smoky, sooted atmosphere, so detrimental to the flower, effectually in the plant banishes spot. Plants have come to me from the favoured localities where vegetation is so luxuriant and the grass so green, but with the taint thick in embryo, in some few cases compelling successive removals of foliage until a stem only has remained; but the most obstinate cases have yielded to the gradual deposition of soot, and spot is beaten from the land. True, this sooted atmosphere has its own evils. If allowed to accumulate in the axils of the leaves, the increase is killed certainly, possibly the plant, and to prevent this a largely increased labour and care are required. But it can be prevented—a thin gauzy net stretched over the plants in spring, and the cold house, the very king of structures for hardy florists' flowers in winter, will enable the florist very materially to circumvent the enemy; and when the flowering-time comes, he must put on his considering-cap, and deal with that difficulty.

But though I feel bound to put on record the greater difficulty surrounding the perfect development of the Picotee in gardens like my own, I have not to write "Ichabod, Ichabod, the glory has departed!" on my petted flower; and many a beautiful vision passes before me, as I recall the glories of the past. Brunette, heavy-edged red, how bright and glistening, compelling the eye to come again and again to its charms! John Smith, in the same class, and undoubtedly best, severe in the beauty of its massive plate of colouring and solid white; Master Norman, in the same way, but of a very different shade of colour, an improved Mrs. Norman; Morna, medium size, but a gem, with me the best of Mr. Fellowes' red-edges; Countess of Wilton, another of the family of Mrs. Norman, and yet good; Mrs. Dodwell, always to be depended upon, and always bright and good; Dr. Epps, getting brighter, apparently, as it grows older; and Peeress, most effective for the home stage, from its great breadth of colour. Some others there were, besides seedlings, which yet may aspire to fame; but these will suffice. Clara Bower is a grand light-edge for the home stage, and Thomas William (Flowdy) and Violet Douglas (Simonite), in the same class, are equally good for show.

Purple-edges are a glorious galaxy, all the shades of purple and lilac exalting by contrast the richness or softness of the white ground. Alliance, Leah, Lizzie Tomes, Medina, Mrs. Summers, Tinnie, and Zerlina are grand examples of the heavier-marked section; to which all should add Mrs. A. Chancellor, shown so finely by Mr. Turner at South Kensington, both in 1879 and 1880. In medium-edges, Alice, Cynthia, Emily, Fanny, and Jessie should each be grown; and in the light-edges, Ann Lord, Baroness Burdett-Coutts (though I much question if this fine flower do not find its home in the medium feather-edges), Clara Penson, Her Majesty, marvellous for size, Mary, Minnie, and Nymph. To all which, let those who can, add Novelty, Matthews, a bizarred-edge, pink on lilac. When I first ventured to show this variety, an elder brother took me roundly to task for the gross innovation, but I am glad to say he has since quite recanted his censure, and now the only cause which prevents its being extensively shown is the unfortunate fact that it cannot be extensively grown.

And so we come to the Roses, veritable Roses to the dweller in towns; adjectives fail me, as I think of the glory of their beauty. Can flowers be more lovely than Edith Dombrain and Royal Visit, twin beauties crowned with chaplets of roses. And Mrs. Payne, the perfection of shape in petal and contour and lovely margin, recalls Mrs. Barnard, of "auld lang syne," with a broader and brighter colour. Then Lady Louisa—who could have imagined forty years since such solid marginal colour, so

inexpressibly sweet, and such a pure white ground, could have been attained? When, nearly forty years since, I meekly ventured to suggest that the colouring on the margin of the Picotee should be of uniform width, and not as prescribed by Mr. Glenny, with a deeper feather in the centre of the petal, some of the fathers of the day stood aghast at my presumption, and I was roundly challenged to answer, how could it be done? But it has been done, and yet there remain vistas of development, mainly, I think in the direction of variety, almost illimitable in their perspective. Picotees in those old days were coarse, in many cases to repulsiveness; now, amongst florists, no variety lacking refinement worthy of the most exalted lady would be tolerated for a moment. To the varieties I have named the aspiring cultivator should add Mrs. Lord, Mrs. Nicholls, Miss Horner, Miss Lee, Fanny Helen, Ethel, Juliana, Miss Williams, Teresa, and Victoria, the latter three light-edges; and, with these, given intelligent and interested attention, results will be obtained which will make the Carnation and Picotee plot a perennial source of delight.—E. S. DODWELL, 11 *Chatham Terrace, Larkhall Rise.*

ASPARAGUS CULTURE.

THIS favourite vegetable will not be abundant in this neighbourhood for two or three years, having suffered very severely from the last two unfavourable years. At the commencement of May, 1878, the crop promised to be fine and abundant, but the heavy rainfall of that period stopped its growth, and at the end of the month there was very little Asparagus to be got. The severe winter that followed, and the cold, dull, ungenial summer of 1879, followed by another very severe winter, completed the destruction commenced in May, 1878. Young and old plantations suffered alike, so that the formation of new plantations became a necessity.

Though found growing in sandy soil, Asparagus can only be grown fine on a deep, light soil, well enriched with manure. In making new plantations, the soil should be trenched from 2 ft. to 3 ft. deep, and plenty of good manure should be placed at the bottom of the trench, and some should be mixed with the soil, as the trenching goes on. The winter season is a good time to trench the soil. The surface should be left in a rough state for the frost and air to act on it; and if the soil be retrenched in spring, it will do it good, as the manure will get more completely incorporated with it. Asparagus may be grown in beds, 4 ft. wide, with alleys of 2 ft. 6 in. wide between; and there may be either two or three rows of plants in each bed. Where only two rows are grown, the asparagus will be larger than where three rows are grown in a bed, but the latter plan will yield the greater quantity.

Towards the end of March, when the soil is in a nice dry state, it should be levelled and raked over; the beds should be all marked out, and strong stakes should be driven down at each corner. The seed may be sown in drills, and the plants, when of a proper size, should be thinned out to about 1 ft. apart; but where one or two-year-old roots can be had, few persons will be inclined to sow seed, seeing that Asparagus is likely to be scarce for some time. The roots should be planted in April, keeping the crown about two inches below the surface.

The following is a good mode of planting the beds, and is one that I can recommend:—Get some boxes from 2 to 3 ft. long, about 1 ft. wide, and 6 in. deep; half fill them with rotten manure, and on this place a layer of nice soil, gently pressing it; sow the seed thinly over the surface, and cover it with fine soil about half-an-inch deep, and then place the boxes in a gentle heat, and water when necessary. The young plants will quickly appear, and, if carefully attended to, they will soon make nice plants. Towards the end of May they may be put into a cold frame, and gradually hardened off. Early in June they may be planted out in the beds, each plant being lifted carefully, with a ball of soil and rotten manure to the roots, and properly planted, and when the whole are planted they should have a good watering. A plantation made in this manner will make good progress the first year, if properly attended to in watering and keeping the surface of the soil well stirred between the plants.

Early in November the stalks should be cut close to the ground, the beds should have a good dressing of stable manure, and a covering of soil from the alleys placed over it. Early in spring the beds should be carefully forked over, and some of the soil should be raked into the alleys. There is very little more required afterwards beyond keeping the bed

clear of weeds at all times, and giving them the winter and spring dressings at the proper time.—M. Saul, *Stourton, Yorkshire.*

THE GLADIOLUS.

I HAVE read with interest both Mr. Kelway's and Mr. Douglas's notes on this grand autumn flower, and must say I am somewhat surprised to find two such eminent authorities holding such adverse opinions. The word "degeneration" may be a misnomer, but "disease" certainly is not. I have repeatedly noticed the foliage to become of a pale sickly green hue, and, on pulling up the plants, have found several black decayed spots on the bulbs. Of course, such bulbs are worthless, and with what can they be affected but by disease? When I lived in Sussex, we grew a quantity of that good old variety *G. brenchleyensis*, and these roots reproduced themselves, doubling and trebling the original stock. The soil was rather stiff, on chalk, so that they naturally had good drainage, which is essential. The bulbs were taken up before frost set in, and were stored in dry earth or sand till planting-time. The soil here is stiff, on clay, and under these conditions we find the stock rapidly decrease. I am, therefore, surprised to find it asserted that they do equally well in stiff clay, and in loam on a bed of gravel, as I should certainly prefer the latter soil for them.

In planting the choicer varieties, we always placed some good loam both under and over the bulbs, and never thought we were favouring nostrums, which might have been the case had we used a special manure. Mr. Kelway's twenty acres of Gladioli must be a grand sight, when in flower; and I should consider what with no disease, no degeneration, and successful growth alike on two such opposite descriptions of soil, which produce stems 6 ft. high, that Langport must, indeed, be for these flowers a veritable "land of Goshen."—G. Potts, Jun., *Epsom.*

SUBURBAN GARDENING.

JANUARY.—"What a glorious autumn!" is the universal remark. It is as if one impassioned appeal had gone up to Heaven that autumn should linger longer than usual, and the answer had come in soft, genial, drying days, that are more like a foretaste of sunny spring than those that usually usher out the old year. Gardening has been, and still is, exceedingly pleasant. "Gardening operations of every kind must, of necessity, be more or less influenced by the season, the weather, and local usage, and the peculiar needs of the cultivator." This is very true; but the golden rule of the gardener should be to make every preparation during midwinter for the active spring season that surely follows it. Hence, composts, turf for potting purposes, and other special soils, should be gathered together, and turned, so that the frost can act upon them beneficially. During frosty weather, work is generally scarce; but pruning can be done, hedge-clippings and other rubbish burned, and the ashes utilised for manurial and other purposes.

Kitchen Garden.—We have already indicated some of the seasonable work necessary here. Those who have *Lettuce*, *Endive*, and other things in frames must keep a watchful eye on the weather, seeing these have been making a succulent growth, and a sudden spell of severe frost (which may occur at any moment) will do the plants much harm, if not protected. At the end of the month, if the weather be at all favourable, early sowings may be made of *Beans*, *Peas*, &c. There is always a risk in early sowing, but in mild and tolerably dry weather early sowings will generally result in early production, and increased bulk and excellence of the crop. Be it remembered that much depends on the character and position of the seed-beds. *Rhubarb* in the open ground may be forwarded by covering the crowns with cement-casks, seakale-pots, &c., and placing litter round them. The *Celery* crop has so far been uninjured by frost; it will, therefore, need protection all the more when the mildness of autumn gives place to the severity of winter.

Fruit Garden.—As planting can be done all through January, it will be well, perhaps, to give a selection of *Apples*, *Pears*, and *Plums*—the three leading fruits found in suburban gardens. Of Dessert Apples, standard or espalier trees of the following should be planted:—*Duchess of Oldenburgh*, *Yellow Ingestrie*, *Cox's Orange Pippin*, *Court of Wick*, *Adams's Pearmain*, *Scarlet Nonpareil*, and *Braddick's Nonpareil*. Of Kitchen Apples: *Lord Suffield*, *Cellini Pippin*, *Stirling Castle*, *New Hawthornden*, *Blenheim Orange*, *Warner's King*, *Mère de Ménage*, and *Dumelow's Seedling*. Of Pears: *Doyenne d'Eté* might be planted as pyramid or standard; as pyramid or espalier—*Beurré d'Amanlis*, *Louise Bonne of Jersey*, *Maréchal de Cour*, and *Beurré Diel*; and as pyramid, standard, or espalier—*Williams's Bon Chrétien*, *Beurré Bosc*, *Jersey Gratioli*, and *Belle Julie*. In addition to being grown as pyramid or espalier, the following may also be planted against a wall:—*Pitmaston Duchess.*

Doyenne du Comice, and *Marie Louise;* the following as espalier, or against a wall—*Glou Morceau* and *Winter Nelis*, and *Joséphine de Malines;* and *Bergamotte d'Esperen* against a wall only. Of Plums: *Early Prolific* and *Prince of Wales* should be planted as standards; *Denyers' Victoria*, *Green Gage*, *Transparent Gage*, and *Prince Englebert*, as standards or against a wall; *Reine Claude de Bavay* and *Belle de Septembre* should go against a wall. It is much the best to plant when there is no frost, and the soil is somewhat dry. If done during the prevalence of frost, no frozen soil should be put in on the roots.

Flower Garden.—Here there is little sign of active life, but January is an important period of preparation, when plants appear as if renewing their strength for the task they discharge in spring and summer. The flower-beds planted with spring bulbs and flowering plants should be looked over occasionally, and kept stirred on the surface and free of weeds. The mixed border should be carefully forked over, without doing injury to the plants, top-dressed with refuse potting-soil, and some loose manure spread over it, as a winter mulching. During mild weather, creeping and climbing and also pillar plants should be pruned and made tidy for the winter. Deciduous trees and roses may be planted in fitting weather, but evergreens will do best when planted in the spring.

Cold Frames.—Plants in pots will need but little water now; the drier the soil, the better can the plants resist frost. All decayed foliage should be removed, as it fosters damp, which is destructive at mid-winter. Air should be given freely in mild dry weather, and the lights closed entirely only when severe frost prevails. The glass of the frames should be kept clean, that light may fall freely on the plants. Cleanliness is all-important in winter, and as, during mild weather, green-fly will gather on the leaves of the plants, an occasional fumigation with tobacco-smoke will be found of the greatest advantage.

Greenhouse.—Thanks to the mild weather and the use of one of Rippingille's warming stoves, we have now much more flower in a cold greenhouse than is usual at this season of the year. It is in fact a circulating hot-water apparatus. The necessary heat is obtained from a duplex burner in a paraffine stove. It has a 5-ft. spread of pipe in three lines, the pipes supported at the end by means of upright square columns, open at the top, also containing water. In an hour, a genial warmth is distributed, and the dryness is tempered by means of the steam given forth from the open columns. The stove is made of strong material and well finished, and is a true friend to the amateur with a cold greenhouse. *Zonal Pelargoniums* are flowering, and the trusses of bloom are very acceptable. *Christmas Roses* in pots are coming fast into flower; they also are valuable at mid-winter. To keep the plants clear of decaying leaves and the surface soil stirred are important matters; plants at rest may be kept pretty dry, those that are growing a little moister. The cold frame will soon begin to supply material for blooming in early spring.—Suburbanus.

GARDEN GOSSIP.

THE annual meeting of the National Auricula and National Carnation and Picotee Societies was held simultaneously, at the residence of Mr. E. S. Dodwell, 11 Chatham Terrace, Larkhall Rise, Clapham, on November 23rd. At this meeting it was decided to again hold the annual exhibitions at South Kensington, under the auspices of the Royal Horticultural Society, the Auricula Show to be held April 19, 1881, the Carnation and Picotee Show on July 19, 1881. The reports and balance-sheets for 1880 were adopted, and showed a balance in hand for the Auricula Society of £10 15s. 1d., and for the Carnation and Picotee Society of £36 8s. 11d. The prize schedules were revised, but few alterations being made. Prizes were added, amongst others, for twelve yellow-ground Picotees, six at least to be distinct. The prizes for seedlings will again be offered, and Mr. G. Smith will repeat his special prizes for Duke of Wellington Polyanthus. The schedules are being printed for early distribution.

— The annual meeting of the National Rose Society was held on December 9th, at the Horticultural Club, Arundel Street, Strand, the Hon. and Rev. J. T. Boscawen in the chair. The report showed a balance in hand of £104. It was determined that three shows should be held in 1881—the metropolitan at the Crystal Palace on July 2nd, the provincial on July 14th, at Sheffield, and an additional or autumn show at Manchester, in September, in connection with the great International Fruit and Flower Show. It was also determined that the provincial show for 1882 should be held at Bath. The election of officers and committee for the ensuing year afterwards took place.

— From Mr. Chichester Hart we have a reprint of his interesting memoir on the Botany of the British Polar Expedition of 1875-6, which originally appeared in the *Journal of Botany*. The memoir will well repay perusal. Mr. Hart remarks on the peculiar conditions of an Arctic flora, that it is only on the low ground of the more southerly parts of Greenland that the surface is uniformly covered with vegetation for any extent, and this consists of small tufted perennials of low matted growth, through which the Willows and Ericaceæ trail and extend their branches, the first alone rarely rising under the shelter of a cliff to a height of 3 ft. or 4 ft. Through this brownish-green carpet conspicuous and beautiful blossoms of Rhododendron, Azalea, Diapensia, Pyrola, and other ericaceous plants, are lavishly scattered; while the cream-coloured Dryas, the snowy-white Cerastium and Stellaria, the pink Silene, and the gorgeous red-purple Saxifraga, often form luxuriant sheets of colour, the latter being comparable to our Scotch

heather, though richer in its effects. True blue flowers, as Veronica alpina, rarely occur; true reds are never met with; and most of all is felt the absence of a greensward, such as the eyes are accustomed to at home. It is also noted as an important characteristic in Arctic plant life, that seedlings are almost entirely absent, a circumstance attributed to the fact that the duration of the sun's power is too brief to enable flowering plants to ripen their seeds; that, in fact, no annuals occur, and that Arctic plants are independent of reproduction by seed. Mr. Hart also mentions that at Cape York and elsewhere, on spots where birds' droppings or guano had accumulated, saxifrages and other alpines were particularly luxuriant. The hint may be worth noting by cultivators.

— There will be two Great Horticultural Shows at Manchester this year, namely, the annual Grand National Exhibition at Whitsuntide, and the Great International Horticultural Exhibition to commemorate the jubilee of the Royal Manchester Botanical and Horticultural Society, which is to open on August 24th, and to continue for four days. Of the latter, it is announced that Her Majesty has been graciously pleased to become the patron, and to contribute £25 to the fund which is being raised to cover the expenses.

— The remarkable variegated Pelargonium Freak of Nature was obtained by Mr. W. Gray, Florist, Thorngumbald, Hull, as a sport from the old Cérise Unique. It was at first very delicate, but its constitution has gradually become stronger. The leaf is white, narrowly edged with green.

— Amongst the small-flowered Pompon Chrysanthemums, one called Snowdrop is quite a gem. Its charming little blossoms are about an inch across, and of the purest and most sparkling white, extremely full, the florets reflexing over each other, and illustrating well the florist's half-globe in its outline. Another similar in character is called Lilac Gem, and is of a pale rosy-lilac, very full, with reflexed petals, forming a semi-globular flower-head, a trifle larger than Snowdrop. These very small-flowered sorts will not only make pretty small pot-plants for decorative purposes, but must also be very useful for bouquet-work, especially for button-hole bouquets.

— The new Lachenalia gigantea is said to be one of the finest of the genus. One bulb alone is sufficient to make a good 40-sized pot-plant; the flower-spike is 18 in. high, and bears 21 large scarlet, purple, and green-tipped flowers and buds. The leaves are bright green and unspotted.

— The gardening world is indebted to the originator of Gishurst Compound for a new substance, called Gishurstine, which is to be as beneficial to the health of gardeners, as the former is destructive to their enemies. It is intended for the preservation of gardeners' boots, and when used will keep the feet dry, as it is repellent of water. It is to be rubbed in like dubbing, once or twice a month, or oftener for boots in constant use, will soften the leather, and has no unpleasant smell. We have tried it, and find that it does what it professes to do, that is, keeps the feet dry, and makes the boots comfortable.

— One of the most attractive plants at Chiswick, says the *Garden*, is a large specimen of Abutilon insigne, also called A. igneum, trained to the rafters in one of the greenhouses. It is literally covered with its bell-like blossoms, and each slender branch is borne down by the weight of the flowers and buds. The rich, deep crimson hue of the blossoms, intermingled with various lighter shades, forms a fine contrast to the large, heart-shaped, bright, velvety-green foliage. A fact worthy of note is that this plant, which occupies several square yards, is potted in a 6-inch pot, which is crammed full of roots, and probably some have escaped through the hole at the bottom.

— We read that Carter's Miniature Drumhead Cabbage is the best of all late autumn and winter cabbages. It has all the appearance of a true Drumhead, and possesses the hardy character of that variety, but it differs from it widely in flavour, which is excellent. It is also a pretty cabbage to look at. It only grows about 8 in. or 10 in. in height, and the little heads are about the same across. Plants of it may be grown 1 ft. apart each way; they do not take up much space in any direction, as they produce but few side leaves, the whole being one solid mass of head. "This cabbage is far more useful than any of the small Savoys for winter crops."

— Mr. A. Grant, writing of his experience with Fir-tree Oil on the destruction of the aphis which infests the auricula, remarks that when he repotted them in the spring he shook them all out and dipped them in rather strong soft-soap and tobacco-water, but found that the insects were not all killed. He therefore determined to try the Fir-tree oil, and mixed half a pint with four gallons of water, and took three plants and plunged them up to the rim. After waiting several days to see the effect, he was so well satisfied on turning them out that he proceeded to dip the whole collection; and afterwards dipped the leaves for the green-fly, laying them on their sides for half an hour to drain. The plants did not appear to be injured in the least; and on turning out those most affected, not a living aphis nor an injured root was to be found.

— The new Polystichum angulare Lathamii, recently received from Mr. W. B. Latham, curator of the Birmingham Botanic Garden, is a very pretty variety, of dwarfish habit, with fronds of a broadly lanceolate, rather irregular outline, densely crowded, so that the upper pinnules of one pinna overtop the lower ones of the next, the pinnules themselves being very much imbricated laterally, distinctly stalked, short, broad, auriculate, and spinulosely toothed, the stipes and also the primary and secondary rachides densely scaly. In some respects it approaches the variety densum, but that, in its typical form, has two or three lobulets distinctly separate, while here the pinnules, though broad, are quite entire, except the spiny marginal teeth.

— At length the merits of Robinia Pseudacacia Bessoniana as an ornamental tree for small avenues, pleasure-grounds, and lawns in villa gardens, to which we have often called attention, is beginning to be appreciated. It is indeed one of the best of the Acacias, and is worthy of being extensively planted. The ornamental character

of this tree is admirably displayed at Chiswick, where Mr. Barron has planted it at intervals of about 15 ft. on each side of a new road at the west end of the Royal Horticultural Society's Gardens. The tree combines elegance with symmetry in a very striking manner, and the bright refreshing green of its graceful foliage adds much to its beauty. The Robinia Bessoniana forms a perfectly globular head, after the style of R. inermis, but is much freer in growth, larger and more feathery. This beautiful tree is perfectly hardy, as it did not sustain the slightest injury by the severe frosts of last winter; and it is not too much to say that healthy handsome specimens, such as those referred to, would add to the beauty of every lawn of suitable extent and every pleasure-ground in the country.

— MR. TURNER has been successful in raising some useful PERPETUAL-FLOWERING CARNATIONS from the variety A. Alégatière. They have the dwarf habit characteristic of that fine variety, and are varied in colour and form; but the most interesting part of the result of this attempt at seedling-raising is the fact that while the seeds were only sown last January, the plants have been each producing from six to a dozen flowers, and freely putting forth side growths up the stem, thus unmistakably showing their perpetual-flowering character.

— THE Council of the Royal Caledonian Horticultural Society have very properly awarded the NEILL PRIZE for the biennial period 1878-80 to Mr. David Thomson, gardener to the Duke of Buccleuch, Drumlanrig, one of the most distinguished of Scottish horticulturists.

— PROFESSOR MORREN, in *La Belgique Horticole*, states that the CHRYSANTHEMUM ÉTOILE D'OR, the yellow-flowered variety of CHRYSANTHEMUM FRUTESCENS, was first brought into notice in 1844, by M. Pepin, in the *Revue Horticole*, and was raised in the South of France from seed of the ordinary white variety by M. Gontant.

— MR. W. PAUL'S ROSE ANNUAL FOR 1880-81 is always welcome. It tells us, with the authority of an experienced rosarian, about the new Roses of the year, and the effects of the winter on old Roses; while the author's "recollections of Roses" embody the history of many of the English-raised sorts. There is a variety of interesting correspondence, and the annual is embellished by well-executed plates of four H.P. varieties—namely, Lady Sheffield, a rosy-cerise; Red Gauntlet, a crimson, both raised by Mr. Postans; Madame Oswald de Kerchove, a white with rosy-salmon centre; and Princess Mary Dolgourouky, a satiny rose, raised from Anna de Diesbach.

— A SHILLING MANUAL of CHURCH FESTIVAL DECORATIONS (170, Strand) appears opportunely just now, this being one of the seasons when the æsthetic taste of congregations finds most general and most fitting expression, in the decoration of the fabric in which they assemble for public worship. The directions here given are clear and concise, and the methods to be adopted at different seasons lucidly explained; so that the book may be useful in teaching the decorators to avoid the crudities we are sometimes called upon to witness, and in showing what may fairly be adopted without violating the canons of good-taste; while, at the same time, its perusal may serve to keep these matters within their proper limits.

— FROM Messrs. Blake and Mackenzie we have received a sample of TEBBS'S COMBINATION PLANT LABEL, of the same shape as, and adapted to replace, the old-fashioned wood label The upper part is made of waterproof card, with a smooth surface which readily takes writing either with a hard pencil or with ordinary writing-ink; and the lower part consists of a metal stem, which will not rot. They will be very useful, and are remarkably neat in appearance.

— A SECOND EDITION of HOOPER'S GARDENING GUIDE has been issued. The work originally grew out of their illustrated catalogue, and now appears in a more convenient form, which will commend it to the notice of amateur gardeners, by whom, as a work of reference on the culture of vegetables and flowers, it will be found very useful.

— WE are requested to state that the business of Messrs. Fowler and Co., of Finsbury Street, is now carried on by Messrs. Corry, Soper, Fowler, and Co., at the same place.

In Memoriam.

— DR. LAUDER LINDSAY, the lichenologist, died a few weeks since, at the age of 52. Dr. Lindsay, about a year ago, resigned the office of Medical Superintendent to the Murray Institute for Lunatics, Perth, after a service of over twenty years, and sought by rest to recruit a shattered system. He was author of the popular *History of British Lichens*, published by Reeve; and also of some illustrated papers, one of which obtained the Neill Prize from the Royal Society of Edinburgh, and which form a thick quarto volume, illustrated by some hundred carefully drawn and beautiful figures.

— MR. WILLIAM PAUL, of the Crossflat Nurseries, Paisley, died on December 12th, at the age of 55. He was one of the oldest, most useful, and most esteemed members of the local horticultural society, in which he had been a competitor ever since 1848. He made a specialty of florists' flowers, particularly of Pansies, and his success in their cultivation and his fame as a judge caused his services to be sought at exhibitions of these flowers throughout the Three Kingdoms.

— MR. ANTHONY PARSONS, gardener at Danesbury, Welwyn, died on December 25th, after a painful illness, at the age of 70. Mr. Parsons has been a prominent figure in the gardening world as an exhibitor and a judge for nearly 50 years. He was one of the best of southern judges of florists' flowers, having in his earlier days been a keen cultivator of them. We have been frequently associated with him, during many years, as a censor at the various exhibitions held in and around the Metropolis, and have never met with a more straightforward and intelligent coadjutor, whether in judging florists' flowers, new plants, or high cultivation. Latterly his health has been failing, and his honest, smiling face has been less frequently seen in public. He was one of the foremost of practical gardeners, and the successful raiser of many first-rate seedlings, especially amongst Azaleas, Pansies, Hollyhocks, and Achimenes. He had also got together a fine collection of British Ferns.

Pelargoniums: Ivy-leaved.
1. Gazelle 2. Gloire d'Orléans. 3. Mons. Dubus.

NEW DOUBLE IVY-LEAVED PELARGONIUMS.

[PLATE 531.]

AMONGST the flowers which have of late years made rapid strides towards perfection, the Ivy-leaved Pelargoniums may be noted as prominent examples. We may especially refer to some of Mr. George's novelties, figured in a former volume, as bearing out this remark in respect to the single-flowered varieties. Our present illustration is ample evidence on the score of the double-flowered sorts, which now form a numerous and a highly-ornamental section. We are indebted to Mr. W. Bull and to Mr. Barron for the selection of varieties here represented. Mr. Bull was fortunate enough to obtain a batch of superior varieties shortly after the appearance of M. Liebmann's König Albert, and GAZELLE, our Fig. 1, represents one of these, of unexceptionable quality, which produces full double flowers of a charmingly delicate tint of French white or blush-lilac. Fig. 2, GLOIRE D'ORLEANS, and Fig. 3, MONSIEUR DUBUS, are varieties sent out by M. Lemoine, and were on trial last year in the Pelargonium collection at Chiswick. These latter, by their bright colours, add a new charm to this most distinct class of varieties, which, amongst other merits, possess that of being some of the best of all basket-plants for the greenhouse or cool conservatory. They are easily propagated and easily grown, and they may, therefore, be strongly recommended not only for basket-work, but also as decorative pot-plants. We know of few subjects, moreover, which are better suited for the cottager's window, where the loving attention bestowed will rarely fail of an ample reward.

The French variety, *Gloire d'Orleans*, raised by M. Lemoine, is remarkable for its dwarf, close habit of growth, and the profusion in which its flower-trusses are produced. In this habit of growth and inflorescence it is distinct from all the sorts previously known; the colour is a bright carmine-rose, and the flowers full and well-formed. *Mons. Dubus* was raised by M. Dubus, and is of a floriferous habit, with fine double flowers of a deep rose pink, which renders the variety very attractive. Both are far in advance in regard to colour, of any of those previously in cultivation.—T. MOORE.

CARNATIONS AND PICOTEES: PAST AND PRESENT.

"BETWEEN Parkinson and the National Carnation and Picotee Society there is a great gulf fixed. What the gulf contained is in some degree reflected by John Rea, who in 1676 had 360 good Carnations; Thomas Hogg, schoolmaster, of Paddington, who in 1812 had a grand collection of Carnations and Picotees, the 'finest in the world,' and numbering more than 700 varieties, of all prices, from 2s. to 60s.; and Richard Pigott, florist, of Cheltenham, who in 1820 published a *Short Plain Treatise on Carnations and Pinks.*" So Mr. Shirley Hibberd, in his sketch of the history of Carnations and Picotees, published in the *Gardener's Magazine* of July 31st last, the best sketch undoubtedly yet written, most full of life and truth. An impression, not at all confined to floriculture, or to the cultivation of Carnations and Picotees, as a part thereof, very generally prevails that the past was the period of palmy days, and we have been frequently assured, generally by those who seem not to understand how to do the work of the present, that the glory and the golden lie all behind us. Well, my experience and my reading of history do not lead me to such a conclusion; and as I think some of this glamour has been cast around floriculture, I ask permission to show what some part of that gulf contained by the light of my remembrance.

My memory carries me back just beyond half-a-century. I saw my first show of Carnations and Picotees in 1829. That was a period in the imagination of many when shows were rife, and floriculture—the culture of florists' flowers, that is—more general than has been the case of late. Wonderful delusion! At that time, and with very slight mitigation, indeed for years thereafter, one-half of the people of England existed in a state of semi-starvation, and in the agricultural districts (where I was born) the "Swing" riots were rampant, the people in their madness of despair burning the precious corn they could get no means to buy.

But to come back to my first show. It was

held in the garden-house of the principal inn of, at that time, a considerable market town —the proprietor happening to be a florist, and taking the lead in such things in the neighbourhood. This garden-house was glazed only along its perpendicular front, and there, with glass in the smallest of strips and sizes—glass being so heavily weighted with duty as to be inaccessible to any save the opulent, persons very few and far between, indeed—and a modern gardener would be aghast if called upon to winter his plants in such a building. At that time, however, the structure was regarded as very superior, and quite gave importance to its possessor. Carnations and Gooseberries were the subjects shown. Never shall I forget the coyness of the exhibitors as to the subjects they had to show. A wanted to see B's production on the table before he displayed his own, and so on, and on. Fortunately, the weighing of the Gooseberries came to break the reserve, and, as this was a matter all watched, or bore some part in, by the time it was finished the flowers were got on the table. Then came another delicate matter, the bringing-in of the judges, a work on no account to be entrusted to one person, lest the opportunity should be taken to bias those functionaries; so a committee was deputed for the purpose. Finally, when the judges were brought to the door, the room was cleared, not however, without difficulty, as A did not hesitate to express his belief that his flowers would be unsafe, if left for a moment unguarded in the company of B, a charity of sentiment which seemed to be by no means singular. Whilst the work of judging was proceeding, dinner was served, and the awards having been completed, the company adjourned in a body to the garden-house, to pass the afternoon with pipes and ale, where, under the several influences of Flora, Pomona, John Barleycorn, and Nicotiana, the shyness and suspicions of the morning seemed speedily to dissipate, and much genial sentiment, in tones of larger or smaller volume, was expressed.

I knew nothing at that time of the governing principle which underlaid the whole of the arrangements in connection with this and many, if not most, other shows of that period. But later in life, I learnt it well. It was a supreme distrust in everybody and everything; therefore everybody and everything were put into bonds. The area of exhibition was limited, because an unlimited area might bring in exhibitors with productions superior to those of men of the locality. The exhibitor was to be inspected, lest A and B should concert arrangements to the detriment of C; and most of all, the judges must be hoodwinked, or otherwise, so exalted was the general estimation of their morality, it was held impossible their judgment could be unbiassed.

This is no fancy picture whatever. When, in 1845, I was urged to join the Derby Floral Society, that Society, in common with all others of which I could get information, was subject to rules warranting every word I have written—rules earnestly believed in and pertinaciously upheld by a large majority of those interested, and which, probably, would have remained for many a long day, but that, from the accident of my position, my adhesion was a necessity to my fellows, and I was despotically resolved that that adhesion should be had only conditionally—that the limited area should become unlimited, and the policy of distrust be abandoned for that of trust.

What came of that policy, and the widely different feeling which grew up and spread amongst florists aforetime very far from each other, any one who may have access to the earlier volumes of the *Florist* or the *Midland Florist* may soon learn; but this much I think I may assert as beyond question—the impetus then obtained for floriculture has continued and increased to the present day.

It would be unfair, however, to pass from this aspect of the case, without some reference to the causes which led to the adoption and maintenance of such vicious rules by our floral fathers. Fifty years ago, railroads were not, postal communication was everywhere costly and slow, intercommunication difficult, and the Press, so far as floriculture was concerned, virtually unknown. Fifteen years thereafter a great stride had been made, our industries had been liberated by the righteous fiscal legislation of the great Sir Robert Peel, the trunk lines of our iron roads were actively employed, the penny post had commenced its beneficent work, free trade in the staple food of the people had virtually been won, and men with money in their pockets able to go beyond their own borders, found their fellows, instead of the

ogres they had in some cases imagined, very full of human nature, genial in heart and mind, and rejoicing in nothing so much as a fine development of their cherished flower, by whomsoever accomplished. So one cobweb after another was swept away, and, thanks to a well-guided floral Press, although millennium is not yet, there is little fear that similar evils will again cumber the path of progress.

Whether, at any period in the past, Carnations and Picotees occupied in the estimation of the flower-loving and flower-cultivating public a higher position relatively than they occupy at this time, or whether they formed a larger factor in the establishments of the wealthy, it is, I think, idle to inquire, as no means of determining the fact exist; but this much I can testify, that never in my life have I known a single surplus layer of known fine stocks to have been grown in excess of the demand; and never, I believe, were so many Carnations and Picotees sold to the general public as during the past few years. As to the attractions of the flowers, and their influence with the public, the existence and the exhibitions of the National Carnation and Picotee Society are ample witness; and as to those exhibitions, I have only to say that in the South they have had no parallel beforetime, either for the number of competitors, the extent of the display, or the intrinsic beauty of the flowers shown. Never, whether in North or South, has the growth and development of the Auricula and the Carnation and Picotee been seen in a higher condition than in the exhibitions of the two Societies during the last six years, and this I fearlessly challenge any critic to gainsay.—E. S. Dodwell, 11 *Chatham Terrace, Larkhall Rise, Clapham.*

RUSSIAN APPLES.

THE following varieties of Apples of Russian origin were described some short time since in the *Revue Horticole*, and may perhaps, some of them, be useful for the purpose of hybridizing, if not otherwise desirable as early sorts.

Lanterne transparente.—Fruit medium-sized, regularly pyramidal, strongly ribbed, about 2½ in. high; stalk much exceeding the cavity, which is small and rather deep; eye broadly open, almost level with the fruit, deep, with very long spreading divisions; skin smooth, of a pale nearly uniform yellow; flesh yellowish white, acidulous, slightly sugary, becoming mealy at extreme maturity. Ripe in the beginning of August; very distinct in shape and pretty.

Transparente à Jour.—Fruit small, subspherical; stalk very long, in a small cavity; eye closed in a rather deep depression; skin uniformly of a yellowish green; flesh white, very slightly greenish; with abundant and rather tart juice. Ripe in August.

Transparente à Jour Blanc.—Fruit furnished with rounded angles, largish, beautiful in appearance, sometimes a little inequilateral, longer than broad; stalk thin, in a narrow deep cavity, which it surpasses; skin shining, of a yellowish green or dim yellow, striped or banded with vinous red on the parts strongly exposed to the sun; flesh greenish white, with abundant, sugary, slightly acidulous juice. Ripe in August and September.

Transparente à Jour de Riga.—Fruit medium-sized, or large, conical, almost pointed, strongly and regularly furnished with rounded angles; stalk short, in a little cavity which it exceeds; eye level with the fruit, closed, skin smooth, even, shining, of a dull green, yellowish when ripe; flesh white, tender, with a fine sugary, agreeable taste. Ripe in the first fortnight of August. A very fine fruit, of good quality.—M.

A SELECTION OF POTATOS.

IN the following list will be found the names of a select number of Potatos, which, for general purposes, may be considered as the best in their respective groups, if we exclude a few novelties which are as yet high in price.

Concerning these novelties I may remark that *Emerton's Advance*, a very fine white kidney, is a *bonâ fide* seedling, and though much in the way of King of Potatos, is a decidedly heavier cropper; it will be found an excellent garden variety. *Wormleighton Seedling* is, I fear, but Magnum Bonum under another name, though reputed to be distinct, but the difference, if any exists, will be fully tested during the coming summer. *Feltham White* is an excellent early white round, that will make a capital early garden variety, being of good constitution, and cropping remarkably well. *Beauty of Kent* is a distinct and valuable coloured round, which I have found to be of excellent quality, and well worthy of cultivation.

Of the American novelties, the new pink kidney *Mr. Breesee* tops them all; it is fault-

less in shape, second early, a heavy cropper, and of excellent table quality. *American Purple* is a very handsome purple-skinned kidney, but I am not sure it is a true American variety; it is quite distinct from Early Purple, a good cropper, of fine quality; and like all purple-skinned Potatos has flesh of pearly whiteness.

Those marked * have been certificated by the Royal Horticultural Society, or at the International Potato Exhibition.—R. DEAN.

Early Rounds: white.

RECTOR of WOODSTOCK,* a heavy cropper; skin smooth, good flavour, and very mealy; fine for exhibition.

EARLY MARKET:* short haulm, flattish-round, with yellowish-white flesh, fine quality.

BREESEE'S CLIMAX,* a heavy cropper, handsome tubers.

PORTER'S EXCELSIOR, very handsome, flattish-round tubers.

BEDFONT PROLIFIC,* a heavy cropper, an improvement on Onwards; fine for exhibition.

Early Rounds: coloured.

RADSTOCK BEAUTY,* heavy cropper, fine quality, and singularly handsome; fine for exhibition.

TRIUMPH, handsome, bright red, and of good quality.

SCOTCH BLUE, a good cropper, handsome purple, with white flesh, fine quality, first-rate for small gardens.

EMPEROR, a good cropper, red, remarkably handsome, fine quality.

Early Kidneys: white.

MYATT'S ASHLEAF, a well-known free cropper, of excellent quality.

KING OF POTATOS, a good cropper, handsome, yellow flesh, of excellent flavour.

INTERNATIONAL KIDNEY,* an immense cropper, very handsome, excellent quality.

AVALANCHE, a heavy cropper, handsome, delicate white flesh, of excellent table quality.

SNOWFLAKE, a free cropper, large, white flesh, of superior quality.

Early Kidneys: coloured.

EARLY PURPLE, distinct and fine, purple with white flesh, first-rate quality.

BOUNTIFUL,* a large cropper, deep red with yellowish-white flesh.

BEAUTY OF HEBRON, a heavy cropper, handsome, very early, good quality.

SCAMMEL'S GLORY, handsome, flaked with purple, good table quality.

PURPLE ASHLEAF, very early and a good cropper, dark purple with white flesh.

Main Crop Rounds: white.

SCHOOLMASTER, robust, large, with netted skin, excellent quality.

REGENT, a heavy cropper, large and of excellent quality, one of the best.

VICTORIA, a good cropper, and of fine quality.

SCOTCH CHAMPION, a heavy cropper, rather deep-eyed, but first-rate in quality.

Main Crop Rounds: coloured.

BLANCHARD, a large cropper, white flaked with purple, handsome and good.

VERMONT BEAUTY,* a good cropper, large, red with white flesh, very mealy.

GRAMPIAN, a heavy cropper, red-tinted, handsome, and excellent in quality.

VICAR OF LALEHAM, very fine, purple with white flesh, first-rate table quality.

Main Crop Kidneys: white.

COVENT-GARDEN PERFECTION, a heavy cropper, very handsome, and of superior quality.

EXCELSIOR KIDNEY, an immense cropper, large, handsome, and excellent.

MAGNUM BONUM, a heavy cropper, and of hardy constitution, late.

LAPSTONE, a good cropper, handsome, and of first-rate table quality.

CATTELL'S ECLIPSE,* a fine cropper and good keeper, handsome, and of excellent quality.

WOODSTOCK KIDNEY, a heavy cropper, handsome, white slightly netted, finest table quality.

Main Crop Kidneys: coloured.

TROPHY, a handsome red variety, fine for exhibition.

LATE AMERICAN ROSE,* a good cropper, a sport from Early Rose, hardier, and a better keeper.

VINES AND VINE CULTURE.

CHAP. XVIII.—THE VARIETIES OF GRAPES.

(Continued.)

THE descriptions of the varieties of Grapes included in our Synoptical Table are here continued, from page 179 (1880).

[Readers will please substitute the accompanying figure of Chasselas Musqué for that given at p. 179 (1880), where by oversight that of Royal Muscadine was introduced.]

DR. HOGG (63).—A round white Muscat Grape.

Vine.—Growth free and vigorous, producing firm, moderate-sized wood, which always ripens well; very fruitful. *Leaves* medium-sized.

Fruit.—*Bunches* long, measuring from 12 in. to 18 in., and tapering to rather a narrow point;

shoulders long and rather loose, drooping, always well set. *Berries* medium-sized, round, on strong stalks. *Skin* membranous, very clear, almost transparent, and, when quite ripe, assuming an amber tint. *Flesh* firm, very sweet, and with a rich Muscat or Frontignan flavour.

History, &c.—This is a seedling raised by the late Mr. Pearson, of Chilwell, about 1869, from Duchess of Buccleuch, and was exhibited before the Fruit Committee in 1871, when it was awarded a First-class Certificate. It is now very general in cultivation, and taking the place of Chasselas Musqué.

Cultural Notes.—Succeeds well in any ordinary vinery, but requires a little more heat than the Black Hamburgh to ripen it thoroughly. It is, however, one of the hardiest of its class.

Season.—Mid-season; keeps well.

Merits.—First-class. The best flavoured and finest-constitutioned of the smaller Muscat-flavoured Grapes, and very deserving of cultivation.

Duchess of Buccleuch (64).—A round white Muscat Grape.

Vine.—Growth strong and vigorous, the wood ripening freely, and always extremely fruitful. *Leaves* roundish, much serrated, and generally of a deep green colour.

Fruit.—Bunches very long and tapering, with large drooping shoulders, always well-set. *Berries* small, round. *Skin* thin, greenish-white, assuming a yellowish tinge when fully ripe, with a thick bloom. *Flesh* tender, very juicy, sweet and rich, with a strong Muscat flavour.

History, &c.—This is a seedling raised by Mr. W. Thomson, when gardener to the Duke of Buccleuch, at Dalkeith; it received a First-class Certificate from the Royal Horticultural Society in 1863.

Cultural Notes.—There are very few more free-fruiting Grapes than this, and the bunches are almost always large and handsome. It will grow fairly well in a Hamburgh house, but to ripen it properly, more heat is required. When grown in a cold temperature, it is somewhat apt to shank, and many of the berries remain of a greenish hue, and never become sweet.

Season.—Mid-season.

Merits.—First-class as to flavour, but owing to its uncertain ripening, it is scarcely worthy of cultivation.

Duke of Buccleuch (25).—A round, white, Sweetwater Grape.

Vine.—Growth very robust, inclining to be gross, the young shoots at times being thick, somewhat soft, and ripening badly. Not very productive. *Leaves* large, fleshy, roundish, deeply serrated, and but slightly lobed.

Fruit.—Bunches large, obovate, or rather short with broad stout shoulders; stalk stout, inclining to be gross or fleshy. *Berries* very large, roundish, somewhat flattened at the ends. *Skin* thin, of a pale greenish-yellow, becoming a fine amber-colour when fully ripe. *Flesh* very tender and juicy, with a very rich and remarkably pleasant flavour.

History, &c.—This noble Grape is a seedling, raised by Mr. Thomson, of Clovenfords, late gardener to the Duke of Buccleuch, at Dalkeith; it received a First-class Certificate from the Royal Horticultural Society in 1872.

Cultural Notes.—The most successful cultivator of this grape is, no doubt, the raiser himself, Mr. Thomson, at Clovenfords. The enormous quantity of fruit and the magnificent quality of the same testify that there, at least, no difficulty is experienced in its cultivation. At Drumlanrig it succeeds remarkably well; as it does also with Mr. Harrison Weir, in Kent, grown in a ground vinery. It is somewhat difficult to establish at first, but afterwards it grows with great luxuriance, and fruits freely. It is best adapted for early work, but not much forcing is necessary; a temperature similar to that provided for the Black Hamburgh suits it well, and it fruits most freely on the young rods.

Season.—Early; for summer use only.

Merits.—First-class; undoubtedly one of the noblest, handsomest, and best grapes in cultivation.

Dutch Hamburgh (83).—A round, black, vinous Grape. *Synonym:* Wilmot's Hamburgh.

Vine.—Growth strong and robust; the shoots somewhat thicker, and, with the bark paler in colour than the Black Hamburgh; very free fruiting. *Leaves* large, dying off yellow.

Fruit.—Bunches medium-sized, rather short, with broad shoulders, very often badly set, a great portion of the berries being imperfectly developed. *Berries* very large, roundish, inclining to oblate, having an uneven surface, giving it a hammered appearance. *Skin* thick, black, adhering to the flesh, covered with a dense bloom, very handsome. *Flesh* firm, often hollow in the centre, coarse and harsh in flavour, excepting when well ripened, when it is sometimes sweet and sugary, but wanting in juiciness.

History, &c.—This is a very old grape, and has been much confounded with the Black Hamburgh, from which it is very distinct. It is more handsome in appearance, and having been at one time very extensively cultivated by Mr. Wilmot, market gardener, at Isleworth, it received the name of Wilmot's Hamburgh. The Mill Hill Hamburgh, which is sometimes regarded as synonymous, is a very distinct and much superior variety.

Cultural Notes.—Requires much the same treatment as the Black Hamburgh, but to set it properly it is the better for being subjected to a rather warm temperature at that period. It is not much cultivated.

Season.—Mid-season. It is apt to shrivel, if kept long.

Merits.—Second-rate in quality; very handsome.

Dutch Sweetwater (26).—A round, white Sweetwater Grape.

Vine.—Growth moderately vigorous, the young shoots inclining to be gross, and frequently not ripening very well; fruitful. *Leaves* roundish, much serrated.

Fruit. — Bunches small, short, with broadish, strong shoulders, frequently very badly set, a great portion of the berries being imperfectly developed. *Berries* medium-sized, round. *Skin* thin, white, almost transparent, showing the venation, and with a slight bloom and tinges of russet when very highly ripened. *Flesh* tender, pale, sweet, juicy, and very pleasant.

History, &c.—One of the oldest of grapes, fast getting out of cultivation.

Cultural Notes.—This grape has long been in repute as the best variety for open-air cultivation, but is often confounded with the Royal Muscadine, which is a much more certain cropper and a superior variety.

Season.—Early.

Merits.—First-rate in quality, but so uncertain in setting as to be scarcely worth growing.

Early Saumur Frontignan.—A synonym of Saumur Frontignan: which see.

Early White Malvasia.—A synonym of Grove-End Sweetwater: which see.—A. F. Barron.

THE OTAHEITE ORANGE.

THERE there is a considerable demand for decorative plants, any subjects that will last throughout the winter months, and yet look well, are to be considered as a boon to the gardener. I can recommend the above-named dwarf Orange as one of the best of all decorative plants at that season; and whether placed as a centre-piece on the dinner-table, or on the side-tables, it will be equally effective, especially when the plants are freely furnished with well-coloured fruit. We had several of them, which caused quite a sensation when used in this way; and afterwards, whenever any large demands were made for plants for the table, the Oranges were always to be included amongst them. The plants bore from a dozen to sixteen good-sized, well-coloured fruit on each, and when I state that such results can be obtained on a plant in a 6-in. pot, the fact that they are most useful and most telling for this particular purpose will not be disputed. The preceding winter we had something like six fruits on each plant.

In the spring of 1880, about the month of March, when overhauling some other stove-plants, the Otaheite Oranges were taken in hand. They were turned out, and the roots carefully examined, all the old, inert soil being picked away, and the drainage renewed. They were then repotted in clean pots of the same size as those in which they had previously grown, and were plunged in bottom-heat, where they remained all the summer, during which period they were well attended to with water, and received copious daily syringings—except just while any of the flowers were open, or when the weather was cloudy and sunless, or likely to be so; under these circumstances, the syringe was withheld.

As soon as the flowers were set, and the pots were well filled with roots, manure-water was given always, until the fruit was nearly ripe, when the plants were lifted out from the plunging material, placed on a shelf near the glass, and gradually hardened off to stand in the cool greenhouse, where they have been the last six weeks, that is, since the middle of November, except when doing duty in the dining-room. I think that they look better in this room than any other subjects we have as yet employed.

The compost in which we find these Oranges to do best consists almost wholly of loam, with either a few half-inch bones or charcoal to keep the soil open; good drainage is indispensable to their successful culture. A dozen plants in 6-in. pots, nicely fruited, will be found a great help in winter decoration; besides which they last so long, not being so tender as many other stove plants. When repotting, it is better to take off all the previous year's fruit, as then all the energies of the plant go to the formation of fresh wood and fruit.—A. Henderson, *Thoresby*.

JASMINUM GRACILLIMUM.

THIS beautiful novelty is one of Mr. Burbidge's discoveries in Northern Borneo, and it was through his instrumentality that it was introduced to the establishment of Messrs. Veitch and Sons, of Chelsea, by whom it was exhibited in a beautiful flowering state in December last at South Kensington, and received the well-merited reward of a First-class Certificate. It is extremely floriferous, bearing its dense panicles of flowers along the whole length of its slender branches, and continuing to flower for a long period in winter, qualities which will render it exceedingly valuable, both for decorative purposes and for bouquet work, as the flowers exhale a delicious perfume like that of the popular *Jasminum Sambac*.

Jasminum gracillimum, so named by Sir Joseph D. Hooker in the *Gardeners' Chronicle* (whence we borrow our illustration), is a stove plant, with slender elongate branches, which are terete and hairy. The leaves are from one to one and a half inch long, opposite, shortly-stalked, ovato-cordate acute, hairy beneath. The flowers grow in dense globular drooping panicles, and are shortly stalked, the corolla being white, with a tube two-thirds of an inch long, and a limb one and a half inch across.

The plant is a very near ally of the well-known *Jasminum pubescens* of India and China, which Sir J. Hooker regards as "the type around which are to be ranged a good many closely-allied species, differing in habit, in the amount of pubescence, and in the size and number of flowers, and of the divisions of the corolla, all of them natives of Eastern Asia and

its islands." "Of these," he says, "*J. gracillimum* is one of the most distinct in its graceful habit, and in the abundance of its large sweet-scented drooping flowers, which are also more copiously produced, in which respect I know of none to compare with it. It appears to be a small species; the pot-plant exhibited by Mr. Veitch at the Horticultural Society, and which was in full flower, was about 3 feet high, branched from the base, the long very slender branches springing from low down on the stem and curving over on all sides, weighted down by terminal globose panicles as large as the fist." The plant flowered with Messrs. Veitch, at the Royal Exotic Nursery, for the first time in December last.—T. Moore.

JASMINUM GRACILLIMUM.

DOT PLANTS FOR WALK MARGINS.

THE pretty *Funkia Sieboldiana* is a plant commonly grown in herbaceous collections, or in mixed borders of hardy plants, but when grown as a single specimen on the turf by the margin of a walk, it forms a dense tuft of handsome drooping foliage, which gracefully curves over so as just to reach the turf, when planted in a small circular plot of about a foot and a half in diameter. The flower-stems rise well above the foliage, and produce a number of light purple bell-shaped flowers, on spikes which do not require staking. It grows freely in most kinds of soil, but succeeds best in that of a dry light character, which should, however, be enriched by manure before planting, to the depth of 20 in. When thus grown it is sure to render satisfaction, and will give no more trouble for many years to come. I have not tried it under pot-culture, but if well grown in neat little specimens, I imagine it would make a graceful plant for table decoration.

The Pampas grass, *Gynerium argenteum*, and the *Arundo conspicua*, are also well suited for similar places, only, being larger, they must be further from the margin. Both these succeed best and look best when elevated a little above the ground, which prevents the foliage from resting on the surface. We have some plants of each planted in rings, about a foot in height made of cement, and having a round projecting margin at top. These were made about 3 ft. in diameter. The soil underneath was taken out to the depth of 2 ft., and the space was filled up with a mixture of half bog earth and half leaf-mould, previous to these borderings of cement being placed in position. We have also some plants raised on sloping banks of turf to about the same height, which, in addition to keeping the foliage up, has the advantage of keeping the collars of the plants dry during the winter months, and thus enabling them to withstand severe frosts better than when they are set on the level. Both these fine ornamental grasses flower freely here.

Another effective small plot-plant is the *Centaurea ragusina*, when margined by *Lobelia magnifica grandiflora*. Amongst other things, standard or trained-up stems of *Echeveria metallica* have also a good effect, when edged round with the free-flowering and brilliant *Pelargonium Vesurius*.—J. WEBSTER, *Gordon Castle Gardens*.

AQUILEGIAS AS FRAME PLANTS.

THE common garden Columbine, *Aquilegia vulgaris*, is one of the easiest grown of border flowers. In all its forms it is a pretty flower, the pure white variety especially, while many of the double forms of varied and brilliant colours are quite distinct from anything else we have, and cannot fail to command admiration. They are perfectly hardy, and only require rich, deep, and rather, light soil.

The species *Aquilegia glandulosa*, *A. cærulea*, and the hybrid form of the last-named variety, *A. cærulea hybrida*, are not so easily grown as *A. vulgaris*, not because they are not quite hardy, but because of the moisture of our climate, combined with the cold, and also because of the unfavourable atmosphere in the neighbourhood of large towns and cities where they are attempted to be grown. I have been so unsuccessful in growing them out-of-doors in the neighbourhood of London that it was determined to cultivate the whole of them in pots, and afford them the protection of a frame. Good loam, with a little turfy peat added, and a fifth part of rotten manure, make an excellent potting material. It has been stated by some that these species of *Aquilegia* are practically biennial. This is not so, as with good treatment they are as much perennial plants as the Phlox. I have plants now five or six years from seed, and they grow stronger and flower better the longer they are kept under our system of pot-culture. The plants cannot bear coddling, and the frame-lights should be drawn off whenever the weather is favourable. I keep the lights on during wet weather, and when the air is very damp, as well as during the prevalence of fogs. The green-fly attacks the young leaves as soon as they are formed, and these must be got rid of by fumigating. Later on, the red-spider attacks the leaves, but this may be prevented or destroyed by syringing the under-sides of them with rain-water once or twice a day, and allowing the plants to be very freely exposed to the air. A great mass of roots is formed in the pots, consequently a considerable quantity of water is required, and we do not fail to give manure-water when the flower-spikes begin to rise.—J. DOUGLAS, *Loxford Hall*.

THE WASHINGTON RATH-RIPE PEACH.

[Plate 532.]

WHEN this Peach was exhibited at Ludlow last summer by Mr. Bond, it created quite a sensation, its very handsome appearance being found to be equalled by its excellent quality. Shortly after this, Mr. Bond was good enough to send us the sample from which our figure was prepared, and in which both artist and colour-printer have acquitted themselves with success. The variety, which appears to be not generally known, is described in the *Fruit Manual* as an excellent Peach, deserving of general cultivation: one which, from the firmness of its flesh, bears carriage well. The flesh is described as firm, yellow, very tender and juicy, and having a rich vinous flavour. Of its beauty, our figure, which is not exaggerated, bears ample testimony. We append a few notes having reference to its high quality, with which we have been favoured by Mr. Bond:—

"I have much pleasure in giving a favourable description of this fine peach, which, for appearance and flavour when fully ripe, is not to be surpassed. It is one of those peaches that will ripen fully and well on the tree. I exhibited it at Ludlow Horticultural Show last August, and gained the first prize; but, owing to the large size of the fruit, the judges, Messrs. Westland, Ward, and Edwards, were doubtful if its flavour was equal to its appearance, so, to make sure, they adopted what is certainly with Peaches a rather novel plan—that of cutting and tasting the fruit, when all doubt of its excellence was removed.

"I have grown it for five years. It is a strong grower, but the crop it bears of such fine large fruit is the best kind of pruning for it. It is in the second house, and being a late peach, is very useful. The flesh is of a rich orange-colour, and remarkably sweet and melting. It keeps well after gathering.

"The variety is of American origin, as its name portends. My employer pronounced it the best Peach of the season, and our Peach season here, with three houses, extended from April 24th until October. Thanks to the late Mr. Rivers, the season may be continued for a long time by making a good selection; and we are equally indebted to American enterprise for some good early sorts, namely, the *Alexander*, which I fruited on April 24th, followed by *Amsden June* and *Haines' Early* (not Hale's, as mostly called), a most delicious fruit. I could enumerate many more equally good, but all my practice is under glass, the situation and seasons rendering out-door Peach culture here impracticable."—G. Bond, *Walcot Park Gardens, Lydbury North.*

THE BEST NEW PLANTS OF 1880.

IN the list which follows, we have brought together some of the more remarkable and interesting of the New Plants of the year, as distinguished from garden seedlings. There are many others which will be welcomed to our collections, inasmuch as they will meet individual tastes; and other good things are omitted, on account of their greater or less resemblance to subjects already well known in our gardens.

Adiantum aneitense.—A stove evergreen species of ornamental character, allied to *A. Cunninghamii* and *A. fulvum*, and likely to prove a useful decorative plant, somewhat taller than the universal favourite, *A. cuneatum*. Pacific Islands. Mr. Bull.——Adiantum monochlamys.—A greenhouse evergreen fern of dwarfish habit, forming a tuft of some 6 or 8 inches high, the fronds ovate, with small, wedge-shaped pinnules, which each bear a solitary large sorus. Japan. Messrs. Veitch.

Albuca Nelsoni.—A fine greenhouse bulb, equalling the *Galtonias* in beauty, with a scape 4 to 5 feet high, well furnished with large ascending white flowers, having a stripe of red down the back of each segment. Natal.

Anthericum Makoyanum.—A greenhouse herbaceous foliage plant of moderate size, with arching linear acuminate leaves of a dark green colour, margined and striped with creamy white; flowers white and unattractive. Origin not known.

Anthurium Andréanum.—This has now flowered under cultivation in various places, and justifies the anticipations formed of it, as the figure in our last volume testifies. In the size, substance, and brilliant scarlet hue of its spathes, it is most gorgeous, and in the general contour of the plant has a marked nobility of aspect.——Anthurium Harrisii pulchrum.—A charming stove plant, with a short caudex, elongate lanceolate leaves of a bright green, edged and dotted with white, and a creamy-white spathe, set off by a deep crimson spadix. Brazil. Mr. Bull.

Asplenium Baptistii.—A free-growing evergreen stove fern, which has the aspect of a bipinnate form of *A. contiguum*, but whether really so or not, it is a most distinct and ornamental plant, with numerous pinnæ and a few elongate pinnules. South-Sea

Islands. Mr. Williams.——Asplenium Sandersoni.—A pretty dwarf evergreen greenhouse fern, forming tufts of narrow pinnate proliferous fronds, with small oblique pinnæ, having a few rounded teeth on the anterior margin. Natal. Mr. Williams.

Bambusa Ragamoskii.—A hardy arborescent grass, believed to be one of the hardiest of the Bamboos; it is vigorous in habit, resembling *Arundinaria japonica*, but having larger leaves, and forms large compact tufts. Turkestan.

Bignonia capreolata atrosanguinea.—A very showy climber, almost hardy, having the tubular flowers of a dark-red purple, instead of the usual orange-yellow colour of the type. North America.

Chorozema (cordatum) aureum floribundum.—A very useful greenhouse bush, being of remarkably free-flowering habit, distinct in colour, and very attractive, the standard deep orange-yellow, the wings and keel whitish; a good exhibition plant, and a bright, cheerful-looking subject for greenhouse decoration. Garden variety. Mr. Kaile.

Codiæum pictum (Croton).—Amongst the best new varieties are:—*Bergmanni*, raised by MM. Chantrier, of Mortefontaine, a fine bold plant, with obovate oblong green leaves, freely marked with canary-yellow on the margin and principal veins, and with a broad central band of the same; and *Warreni*, introduced by Mr. Williams from Polynesia, with beautiful long drooping twisted dark-green leaves, mottled and suffused with yellow, orange, and carmine, becoming intensified into a rich carmine. Others, as *Carrièri*, *Evansianum*, *Hanburyanum*, *Nevillæ*, *and Stewartii*, are acquisitions.

Colocasia neoguineense.—A fine stove Arad, with cordate acuminate deep-green leaves, handsomely blotched with white, like a Dieffenbachia. New Guinea. Mr. Linden.

Cornus brachypoda.—A novelty amongst hardy deciduous trees, being of tabuliform habit, the trunk erect, the branches horizontal, and the flowers in cymes like those of the Eldor, but whiter; reported to be an acquisition. Japan. Messrs. Veitch.

Cypripedium Spicerianum.—Stove perennial, from India, the flowers having a handsome and distinct large white dorsal sepal, marked with a purple mid-line, undulate greenish purple-specked petals, and a purple-brown lip.—C. Morganianum is a hybrid between *C. superbiens* and *C. Stonei*, and has noble flowers with whitish dark-lined sepals, yellowish-white petals, with dark blotches and stripes on the inner margin, and a brownish-mauve lip, of a sulphury-white beneath. Messrs. Veitch.

Daphniphyllum glaucescens.—A dwarf hardy dense-growing evergreen shrub, with bold spreading leaves 5 in. to 7 in. long, of a pale fulvous-green above, glaucescent beneath, the bark, footstalks, and midribs being bright crimson, and the aspect such as to render it ornamental in small pots for decorative purposes, or as a lawn shrub, or for winter bedding. Japan. Messrs. Veitch.

Disa megaceras.—A greenhouse terrestrial orchid fully equal in interest to *D. grandiflora*, though less showy. The numerous large flowers grow on a stout stem, in a spike 8 to 12 inches long, and are white spotted with purple, the upper sepal or hood being conical, and extended behind into a long slender greenish-white horn. South Africa, Glasnevin; Mr. Elwes.

Dracæna Lindeni.—A fine and effective stove shrub, with narrow recurving green leaves, margined with creamy-yellow, of a handsome and distinct type. South Brazil. M. Linden.—Other novel and showy sorts are:—D. regis, broad-leaved and dark coloured, with abundant rosy vegetation; of French origin. D. aurantiaca, narrow and drooping-leaved, with a marginal band of bright orange or flame colour, the young growth being almost wholly suffused with this orange tint. D. Knausei, broad and recurved, the bold green leaves bordered with rose-colour. The two last are seedlings raised by Mr. Wills.

Dracocephalum Ruprechtii.—A showy hardy perennial labiate, with long spiked whorls of large blue flowers, much in the same way as those of *D. Ruyschiana japonicum*. Turkestan.

Eucryphia pinnatifolia.—A very handsome deciduous shrub, growing some 8 or 10 feet in height, with deep green glossy pinnate leaves, and large saucer-shaped white flowers. One of the most beautiful hardy or half-hardy shrubs in existence. Southern Chili. Messrs. Veitch.

Fritillaria Walujewi.—A desirable hardy bulb, which grows 2 ft. high, and has linear leaves attenuated into a tendril, and large solitary drooping flowers, greyish or lead-coloured exteriorly, and purplish-brown spotted with white within. Alatau. Dr. Regel.

Gentiana Kurroo.—A charming rockwork plant, forming a subrosulate tuft of linear-oblong leaves, from whose axils spring the slender flowering stems, bearing from one to five large funnel-shaped flowers spotted around the throat with blue on white, and margined with a band of resplendent azure. Himalaya. Mr. Bull.

Geranium atlanticum.—One of the finer species of hardy perennial Crane's-bills; it grows to a moderate stature, has palmately-cleft leaves, and largish purple flowers veined with red. Algeria.

Haberlea rhodopensis.—A charming alpine perennial, with radical obovate toothed leaves, and three-flowered scapes bearing pale blue flowers with a yellow throat—in size and form very much recalling those of *Chirita sinensis*. Balkan Mountains.

Helichrysum frigidum.—A distinct-looking hardy alpine, with slender, decumbent, freely branched stems, clothed with linear-oblong leaves, each branchlet terminating in a flower-head, of which the longer inner bracts are white, the heads being sufficiently numerous to give the plants a decorative character. Corsica.

Hoya globulosa.—A free-growing stove climber, with fleshy elliptic leaves, and large globose heads of straw-coloured blossoms. India. Cranston Co.

Incarvillea Olgæ.—A showy, bignoniaceous, herbaceous plant, supposed to be a biennial, and quite dissimilar from other hardy plants; it grows 3 ft. to 4 ft., the single stem furnished with opposite pinnate leaves having long incised lobes, and in its upper part forming a branched panicle of funnel-shaped purple flowers, each more than an inch long. Turkestan.

Jasminum gracillimum.—A slender free-blooming twiggy stove shrub, with large white flowers, and likely to prove a good decorative subject. See figure at p. 23. Borneo. Messrs. Veitch.

Lælia.—Some new forms of Lælia prove to be very chaste and beautiful, as, for example, *L. majalis alba*, *L. Perrinii nivea*, and *L. anceps vestalis*, all white-flowered.

Lastrea Maximowiczii.—A fine hardy evergreen fern, with leathery fronds of a bright glossy-green colour, and with some resemblance in the cutting to our familiar *L. dilatata*, but altogether more refined in character. Japan. Messrs. Veitch.——Lastrea Richardsii multifida.—One of the finest of tasselled stove ferns, with pinnato-pinnatifid fronds, having the apex of the frond and the apices of the pinnæ dactyliferous. New Caledonia. Messrs. Veitch.

Lilium nitidum.—A new and very distinct lily, with an erect paniculate inflorescence supporting a score or more recurved flowers, of a bright yellow,

copiously spotted with red-brown dots. California. Mr. Bull.

Miltonia Bluntii.—A fine stove epiphyte, the flowers of which have yellowish sepals blotched with cinnamon, and a broad white lip purple at the base. Brazil.—Some choice varieties of *Miltonia spectabilis Moreliana*, named *rosea* and *radians*, are also acquisitions.

Musa sumatrana.—A handsome variegated, tall-growing stove plant, with long-stalked, oblong-elliptic leaves, elegantly marked with transverse blotches of chocolate-brown; possibly a Malayan form of *M. zebrina*. Sumatra.

Narcissus Bulbocodium citrinus.—A handsome hardy bulb, the largest known form of the Hoop-petticoat Narcissus—a form with beautiful sulphur-coloured flowers of large size. See figure at p. 67 of last volume. Biarritz. Mr. Barr.

Nepenthes bicalcarata.—A very peculiar and handsome Pitcher-plant, whose large pitchers are covered with rusty down, have broad toothed wings, and are further remarkable for the two sharp horns or spurs, which project over the mouth beneath the lid, the neck also being furnished with a blunt dorsal spur. Borneo. Messrs. Veitch.—Several hybrid Pitcher-plants of American origin, N. Lawrenceana, Outramiana, Williamsii, robusta, and compacta, have made their appearance, and are interesting additions to a remarkable family.

Picea ajanensis.—A hardy evergreen tree, new, in name at least, formerly known as *Abies Alcockiana*, one of the most beautiful and hardy of the Spruces. Japan. Messrs. Veitch.

Polystichum tripterum.—A very distinct evergreen hardy fern; the narrow equal-sided fronds have falcate acute pinnæ, and produce at the base two branches or enlarged pinnæ standing right and left, of the same character, but smaller. Japan. Messrs. Veitch.—Polystichum lentum, East Indies, and P. viviparum, West Indies, are useful evergreen stove ferns, the latter especially having handsome, glossy, proliferous drooping fronds. Mr. Bull.

Populus alba Bolleana.—A fine hardy deciduous tree, of pyramidal growth, the leaves resembling those of *P. alba* in form, and being silvery-white beneath. Tiflis.

Pteris moluccana.—A bold but refined pinnate hothouse fern, with largish fronds, having dark-brown stipes, and shining green elongated linear pinnæ, 12 to 18 inches long. Moluccas. Messrs. Veitch.—P. internata, a dwarf tufted evergreen stove fern, allied to *P. heterophylla*. Jamaica. Mr. Williams.

Ravenia rosea.—A greenhouse evergreen rataceous shrub, of ornamental character, having the aspect of *Choisya ternata*, with opposite trifoliate stalked leaves, and showy axillary Diosma-like rose-red flowers of considerable size. Brazil.

Renanthera Storiei.—A handsome stove epiphyte of very floriferous character, equalling, if not excelling in beauty the well-known R. coccinea, and having flowers of the brightest yellow and vermilion, and a dark-coloured lip. Philippine Islands.

Quercus cuspidata variegata.—An elegant hardy evergreen Japanese tree, having the neat simple myrtle-like leaves either margined or marbled with creamy-white. Japan. Messrs. Veitch.

Sagenia Lawrenceana.—A noble stove evergreen fern, a close ally of the Mascaren *S. Pica*. It has very large triangular-ovate fronds, pinnately divided, with unequal-sided lower pinnæ; and polished black stipes and rachides. Madagascar. Mr. Sander.

Scabiosa pterocephalus.—A good rock plant, perfectly hardy at Kew, and when in flower very ornamental; it forms large low cushions, and bears compact heads of pinkish-lilac flowers. Also called *Pterocephalus Parnassii*. Mountains of Greece, Kew.

Selaginella involvens variegata.—This is one of the rosulate habited Club-mosses, which roll up ball-fashion when dry, and which in this variety has the fronds prettily variegated by the growth of occasional white branchlets. Japan. Mr. Bull.

Spiræa Aruncus astilboides, also known as *Spiræa nivosa*, and *Aruncus astilboides*.—A very charming evergreen hardy perennial, which will take rank as one of the finest things in its way, but whether for general purposes it may become as useful as the now popular *Astilbe japonica*, remains to be proved. It has compound leaves, and feathery panicles of white flowers. Japan. Mr. Bull.

Tulipa Gesneriana Strangwaysii.—A glorious hardy bulb, with the flowers very large, and of a deep crimson colour, on tall scapes. South Europe. Col. Clark.

Vriesia Falkenbergii.—A very handsome stove bromeliad of tufted habit, with deep green bronzed decurved leaves, and a central two-ranked spike 10 to 12 inches high, of boat-shaped bracts, vermilion-scarlet at the base, greenish-yellow above, subtending the white flowers. One of the best novelties of the year. United States of Colombia. Mr. Bull.

Yucca gloriosa medio-striata.—A very effective hardy arborescent plant, in which each of the leaves have a broad whitish-green band down the centre. Messrs. Veitch.—T. Moore.

THE DOUBLE TUBEROSE.

THE *Polianthes tuberosa*, or as it is most generally called, the Tuberose, was originally brought from India in 1629, and consequently has been for a very long period an inmate of our gardens, where, on account of its fragrance it has become a great favourite.

The tubers are now generally imported early in the spring, from Italy or North America. They should at once be potted in

small pots, in rich light soil, and placed in heat, water being very sparingly given, until the plants have commenced to grow freely; and when the small pots have become well filled with roots, they should be shifted into 6-in. pots, in which they may be left to flower. By the time the flower-stem is pushing up, the plants will bear to be treated liberally with water, and they should also be kept well up to the glass. They may now be occasionally watered with manure-water. The leaves should present a rich green colour. When the foliage takes on a yellow hue there is something wrong at the roots, and plants in this condition never produce good flowers—very frequently no flowers at all. If, however, the plants are grown on in a healthy, vigorous state, the flower-stems will grow 3 ft. high, or sometimes even more, and will produce from 15 to 20 beautiful white flowers. The flowers of the Tuberose being deliciously fragrant, they are great favourites for the decoration of the drawing-room and the conservatory. The double-flowered variety represented in the accompanying figure [kindly lent to us by Messrs. Baxter and Son] is the handsomest and most durable. By planting at different periods, say, in March, April, and May, the season of flowering may be correspondingly prolonged.

Some growers prefer to plant the roots on a slight hot-bed, and to pot them off after they have started into growth at once into the flowering-pots. In this case, they may be left until the flower-stem is 6 in. high. After potting, they should be kept close, and shaded for a few days, until they have drawn fresh roots. If this method be preferred, a hot-bed frame will be required for the first lot; hooped sticks and mats would do for the second; and the third, which need not be planted out until May, might be put into the open ground, but these, also, will be benefited by having a slight hot-bed beneath, to start them into growth.—George Eyles, *Mortlake Road, Kew.*

SUBURBAN GARDENING.

FEBRUARY.—We opened our last article under this heading by remarking, "What a glorious autumn!" At the present moment we can remark with equal truth,—"What a severe winter!" The wintry weather has burst upon us suddenly with a hurricane of wind, driving before it such a fall of snow as the country has not witnessed for years. The land is snow-bound and frost-bound, and gardening operations, as far as the open ground is concerned, are at a stand-still. It may be days or weeks that the land will lie in the wintry embrace, therefore the amateur gardener should make it a time of preparation, so far as he can do so, for the busy season that will come when the icy reign is over. There are many things he can do, as we indicated last month.

Kitchen Garden.—So soon as the snow has cleared away, and the soil is sufficiently dry to be workable, ground to be cropped should be dug or trenched, or forked down, as required, and efforts made to get the surface as dry as possible, ready for sowing. In dry, frosty weather, soils and manures should be wheeled on to the ground where necessary, and new borders and beds constructed. Sowing should be proceeded with immediately, if circumstances of weather are favourable to the prosecution of this work; but the villa gardener should not be in too great a hurry to sow, and the more especially as of late years we have experienced late and inclement springs. *Cauliflower*, *Lettuce*, and *Parsley* plants should be protected as much as possible, but we anticipate that the severity of the frost will have nearly destroyed many of them. February should be as much as possible a time of preparation for the active work in the garden that must be done in March.

Fruit Garden.—Any arrears of pruning and training should be pushed forward when the weather is favourable. Old fastenings should be examined, and their stability and size ascertained. The latter is a point of considerable importance. A clever gardener has remarked, "No end of plants have their symmetry marred, and their health ruined, through neglecting old ties, shreds, and nails. These eat through the bark, cut and corrode the wood, unseen and unthought of, and beget canker and a host of diseases, and, indeed, sudden deaths when least expected. Our young trees, or fast-growing plants of any kind, should have every shred or tie examined, and, if need be, removed each season. If the fastenings are at all firm now, they will bite deeply into the bark or wood before the end of the year. In making fresh ties or shreds, see that space is left for the growth of the wood; and that, if nails are used, they are placed clear of the growing shoots, with sufficient margin for rapid growth. Such are some of the essentials of training." As to pruning, it is difficult to give exact directions that will meet all cases. The gardener should remove as much old and worn-out wood as possible, and fill up the spaces with younger wood that will bear fruit. After thinning-out the old wood on *Peaches*, *Nectarines*, *Apricots*, and *Plums*, the young shoots will need shortening back to from six to fifteen inches from their base. Short wood

may have to be cut to two to three inches. The chief object of this beheading of the young wood is to start all the buds back along its entire length. Without such cutting-back, probably only a few buds at the upper end would break into shoots, and the tree would speedily become bare of fruit-bearing wood, from the root upwards. The object of pruning is to keep the whole tree, from bottom to top, furnished with fruit-bearing wood.

Flower Garden.—When the weather is mild, creepers upon walls, pillars, trellis-work, and such places should be pruned and trained. The deciduous plants, such as *Clematis*, *Honeysuckle,* and others, may be pruned in hard, excepting the spring-flowering varieties of the former, that should have all the wood of last summer left untouched, and only the decayed shoots cut out. Creepers and plants of all kinds against walls should be nailed firmly to them, as the wind is very apt to blow them about when in full leaf. The hardier kinds of roses may be pruned towards the end of the month, the tender kinds not till March or April. When the thaw comes, it will be found that many shallow-rooting plants, such as *Daisies*, *Pansies*, *Primroses, Polyanthus*, &c., will be thrust up out of the soil by the action of the frost. The gardener should go carefully through the beds, and press all plants so loosened carefully into the soil, adding, if possible a top-dressing of a fine compost, to give the plants a fresh start. We fear there will be many losses from the severe frost, and happy is that gardener who has a reserve of plants to draw from.

Cold Frames.—Nature has helped the gardener during the frosty weather, by piling on his frames a deep covering of snow. In the absence of snow, dry straw in a loose state, old hay, mats, or wooden shutters, can be used as protectors. It is well in the case of hardy plants to exclude as much frost as possible. When the weather becomes mild, advantage should be taken to go through the frames, pressing the soil firmly about the roots of plants where it has become loosened, and top-dressing in all cases. Water should also be given sparingly, but enough to preserve the plant in growth. Any early bulbs coming into flower should be taken into the greenhouse, to assist them in coming on into bloom.

Greenhouse.—Alas! for the occupants of many a suburban greenhouse that could be warmed only in a haphazard make-shift fashion; many a plant will have gone down before the fierce attack of the frost. When the losses are counted up, the death of many a favourite will have to be deplored. Happy are they who have their glass erections heated by hot water, or by means of a serviceable flue! In the case of the cold house, the gardener can only wait patiently for mild weather to show what has survived; but in his warm house a little air and water will be requisite as the days lengthen, and brighter weather ensues. Such a house will soon be gay with *Cytisus*, *Camellias*, *Cinerarias*, *Chinese Primroses*, *Dielytras*, *Hyacinths*, and many other spring-flowering plants. They require sufficient water to maintain them healthy, and above all, need to be kept clean. The most cheerful time of the year is rapidly approaching, and the gay spring-time should smile with the fairest of flowers, in the best possible condition.—Suburbanus.

GARDEN GOSSIP.

THE Southern National Florists' Societies, namely, the Auricula Society and the Carnation and Picotee Society, have issued their schedules for 1881. They contain but few changes, having been already found to work well. For the former flower, the classes for fifty, twelve, six, four, and two remain as before, the premier prize for the best twelve being understood to be the blue ribbon of the day. In the single-specimen classes, the two types of golden and white-centred Alpine Auriculas are separated, and a place is made for Fancy Auriculas, a term which is extended to include the very pretty and novel laced varieties, and also those with double flowers. The class for twelve hardy Primulas, other than Auriculas, Polyanthuses, or common double and single Primroses, will, we hope, bring out a better competition than last year, as it would add very much to the interest of the show, which is to take place at South Kensington on Tuesday, April 19th. For the Carnations and Picotees, the show is fixed for Tuesday, July 19th. The classes are substantially the same as last year; but one for twelve yellow-ground Picotees, six of which are to be dissimilar, has been added, which will give an opportunity for the display of Mr. Turner's grand novelties in this way, several of which have won high honours as seedlings. This show is also to be held in the Royal Horticultural Society's garden. — The Annual General Meeting of National Florists' Societies—Auricula, Royal Tulip, and Carnation and Picotee—Northern Section, will be held in Manchester on February 2nd.

— The Lastrea Richardsii multifida, recently introduced from New Caledonia by the Messrs. Veitch and Sons, of Chelsea, is one of the handsomest of tasselled stove ferns. The fronds grow 3 feet high, and are numerously developed from a short decumbent caudex. The stipes is a dark purplish-brown, the lamina of a bright green, oblong lanceolate, not gradually diminishing at the base, but having one or two pairs of small abortive basal pinnæ. The pinnæ are upwards of 4 inches long in the broadest part, and terminate in a densely-fingered tuft of about fifty long narrow acute divisions, the apex of the frond dividing into two or more branches, consisting of about seventy of these small finger-like segments. Its bright green colour and bold-crested apices, with their numerous narrow divisions, give this plant a singularly elegant character.

— Writing of Eucharis amazonica in the *Gardeners' Chronicle*, Mr. Pragnell, of Roehampton, observes:—Our plan is to shake out the bulbs early in January, select the largest, repot-

ting them five to seven in an 8-inch pot, in soil consisting chiefly of loam, with a little leaf-soil, decomposed manure, and sand added. The pots are plunged, with the plants well up to the glass, in a bed of leaves and fermenting manure, with hot-water pipes underneath, in a pit destined for Melons later on. In a few weeks, when pretty full of roots, they are lifted out into a warm greenhouse for about a fortnight, then placed in a warm, moist stove, in a light position, where the flower-spikes soon appear. After flowering, the plants are grown on for a time with occasional doses of manure-water; again removed to the greenhouse and back again, with the same results. Mr. Rentown, of Rochampton, has been most successful with Eucharis in comparatively small pots, having had some in flower nearly the whole year through, under much the same conditions of culture.

— THE name of COTONEASTER ACUTIFOLIA appears to be that which belongs to the plant known as *C. Simonsii* (often incorrectly written Simmondsii), and which is also known in some gardens as *C. himalaiensis*. This is certainly one of the best and most ornamental species of a decidedly ornamental genus, and affords during the dull winter months a fine show of its handsome, glossy, orange-scarlet fruits, in places where the birds will allow them to remain on the bushes.

— THE EAST ANGLIAN ROSE SOCIETY is a new Society, consisting of Rose growers (amateur and professional) in the counties of Norfolk, Suffolk, and Essex, the object of which is to improve and encourage the culture and love of the Rose in these three counties, by holding annual shows in some one of them. The Rev. P. Roberts, Scole Rectory, Diss; the Rev. H. A. Berners, Harkstead Rectory, Ipswich; and Mr. B. R. Cant, Colchester, are the hon. secretaries *pro tem.*; and it is proposed that the first show be held at Ipswich.

— MR. LAXTON offers a NEW PEA, JOHN BULL, which he considers the best of his introductions. It is a main-crop pea, 3 ft. high, a blue wrinkled marrow of the first size and quality, of the same parentage as Marvel, and "unapproached in size and beauty of pod, quality, fertility, and regularity of growth, by any other variety of the same class." The pods bear as thickly as those of Fillbasket, and each contain from nine to thirteen compressed peas; they are larger than those of Marvel, deeper in colour, and somewhat less curved. Sown on the 11th of March, the crop was fit to gather on the 11th of July.

— AMONGST some new hybrid Amaryllids raised by Messrs. Veitch and Sons, one called AMARYLLIS LILACINA, a cross between *A. reticulata*(♂) and one of the fine varieties of the *Leopoldii*(♀) section, is quite an acquisition. The leaves are marked with the characteristic white longitudinal stripe of A. reticulata, and the flowers also have the beautiful venation and deep lake colour suffused into the brilliant hue of the Leopoldii parent. The growth of the plant is freer than is usual in *A. reticulata*, and the number of flowers in each umbel is greater, six or more being produced in one truss. It flowers at the same time as *A. reticulata*.

— THE Lantanas are very useful plants, either as stove or greenhouse decorative pot-plants, or for the outdoor summer garden. We are, therefore, pleased to note in LANTANA VICTOIRE an exceedingly pretty new white, which should find a place wherever these plants are used. The flowers are pure white, with a lemon eye, and have a very chaste appearance, especially when expanded under glass in early spring. The Lantanas are of the easiest cultivation, and are in all cases very pleasing when in flower, the changes which often take place in their colouring as they advance in age being very interesting and attractive.

— IN the *Rose Annual* of Mr. W. Paul we find the following NEW ROSES OF 1879-80 noted as those which have most commended themselves to Mr. Paul's good opinion, and his experience may be pretty safely followed in this respect:—H.P.—Catherine Soupert, Comte de Mortemarte, Ennemond Boule, Gloire de Bourg-la-Reine, Henriette Pettit, Julius Finger, Madame Ducher, Madame Oswald de Kerchove. BOURBON—Jules Jurgensen. TEA-SCENTED—Jean Lorthois, distinct and good; Jules Finger, Madame Angèle Jacquier, promising, in the way of Rubens; Madame Barthélemy Levet, Pierre Guillot, good and distinct. Of the English-raised roses of that period, Countess Rosebery and the Duchess of Bedford are pre-eminently the best.

— M. LEMOINE'S new double-flowered Lilac, SYRINGA VULGARIS RUBELLA PLENA, appears to be a beautiful and most desirable addition to the list of hardy shrubs. The blossoms are perfectly double, of a reddish-purple colour, and produced in large dense panicles.

— MESSRS. CARTER AND CO.'S NEW PEA PRIDE OF THE MARKET, which has hitherto been known under the provisional name of Strength, is a selection from Stratagem—a blue wrinkled marrow, of very superior character, dwarf (2 ft.), and prolific, with large well-filled pods. Like it, Pride of the Market is a prodigious bearer, but has indented instead of wrinkled seeds. It is likely to prove a most useful pea for market purposes, on account of its cropping qualities, which are prodigious.

— A REMARKABLE cluster of GROS GUILLAUME GRAPES was shown by Mr. Roberts, gardener to the Countess of Charleville, Charleville Forest, King's Co., at the last winter show of the Royal Horticultural Society of Ireland. This mammoth bunch, which was well coloured for such a monster, fairly finished, and symmetrical withal, which turned the scale to the tune of 21 lb.—one and a half stone—was highly commended by the judges, and awarded the Society's Large Silver Medal by the Council.

— THE recommendation to TIE THE MATS DOWN, given recently by Mr. Duffield in the *Gardeners' Chronicle*, is good advice, now that wintry storms have reached us. He writes:—One prediction may, I think, be safely made, viz., that in some gardens a considerable quantity of glass will be broken during the next six months, not so much by the frost, as by the means used for keeping it out. There are at least two methods of securing mats, &c., in position when used as covering for glass erections. One is loading them with anything that can be laid hands on, such as planks, ladders, old iron, bricks, &c. This, from a glazier's point of view, is a good enough plan. A better one, in my opinion, however, is to stretch two lengths of stout tarred twine over the mats from end to end of

the frame or pit—one near the back, the other near the front, tying the ends to eyes screwed into the woodwork. Eyes are much better than nails (unless it is desirable to make work for the tailor), and they are very cheap. The obvious advantages of this plan are that it is much quicker, more secure, infinitely more tidy, and breaks no glass. When the mats are to be removed, the twine is untied at one end and neatly coiled up at the other.

— Dr. Lawson Tait has recently investigated afresh the question of Digestion in Plants, and has obtained complete proof of a digestive process in *Cephalotus*, *Nepenthes*, *Dionœa*, and the *Droseraceæ*, but entirely failed with *Sarracenia* and *Darlingtonia*. The fluid separated from *Drosera binata* he found to contain two substances, to which he gives the names "droserin" and "azerin." The fluid removed from the living pitcher of *Nepenthes* into a glass vessel does not digest. A series of experiments led him to the conclusion that the acid must resemble lactic acid, at least in some of its properties. The glands in the pitchers of *Nepenthes* he states to be quite analogous to the peptic follicles of the human stomach, and when the process of digestion is conducted with albumen, the products are exactly the same as when pepsine is engaged. The results give the same reactions with reagents, especially the characteristic violet with oxide of copper and potash, so that there can be no doubt that they are peptones.

— Amongst the Pyramidal Pear Trees at Chiswick there are some which year after year demonstrate, in the most forcible manner, their great value as certain croppers in our climate, yet which are almost unknown to our gardeners. One of these is the *Belle Julie*, a variety which naturally forms a handsome pyramidal tree, and always carries a crop of fruit. The fruit is somewhat below medium size, the flesh yellowish white, of the Winter Nelis character, and delicious in flavour. It is in use during November.

— The white-flowered Weigela candida, a hardy deciduous shrub of Continental origin, and at present rather scarce, is a most useful acquisition as a decorative plant, whether grown outdoors, or in pots for forcing. The flowers are pure white, and produced as freely as in the case of W. amabilis. Like the other varieties, however, it is of free growth and easily propagated, so that it will soon become plentiful.

— We notice that Mr. W. Bull is advertising the new Double White Bouvardia, which has been raised in America, and is noticed in the American publications. It is named *Alfred Neuner*, and has been obtained by Messrs. Nanz and Neuner, of Louisville, Ky. If a vigorous-growing variety and a profuse flowerer, as it is said to be, it will be most welcome, as it bears a large, compact cluster of perfectly double white flowers. Mr. Meehan, who has seen the flowers, writes of it, —"We have not had anything at hand for a long time so beautiful, and we fancy it will have a run of popularity unexampled in floriculture."

— The pretty Indian Rue called Bœnninghausenia albiflora, formerly known as *Ruta albiflora*, is remarkable for its light green fern-like foliage, and its elegant leafy panicles of flowers, having oblong, entire petals, in which respect it differs from the true Rues. It is a perennial-rooted herb, one to two feet high, with bipinnate or tripinnate leaves, having obovate or obcordate leaflets, glaucous beneath, and compound terminal leafy cymes of drooping or nodding white flowers, ¼ to ½ in. in diameter. The Japanese *Ruta japonica* is considered to be the same plant. In sheltered places in the open air it succeeds fairly well, but it is also sufficiently attractive to be grown in pots for the decoration of the cool conservatory. When well grown and nicely flowered, it is really a very pretty subject.

— The merits of the Poinsettia pulcherrima plenissima begin to be appreciated. In a well-developed specimen grown by Mr. Latter, of Ipswich, the head of floral bracts was nineteen inches across, and the coloured bracts, large and small, fifty-five in number. The magnificent display which a few plants with inflorescence like this, must produce, may easily be imagined. This superb variety appears brighter than the normal form, and therefore, when better known, is likely to supersede it altogether.

— Dr. Harley, of St. Thomas's Hospital, has determined that Fools' Parsley is Not Poisonous. Experimenting some years ago with this plant, which is reputedly a virulent poison, though he failed in his immediate object, he discovered that the plant is perfectly harmless. This fact he has since established by experiment on himself and other persons. The carefully prepared juices of the young plant in its most succulent condition, and of the same generation of plants in their fully matured condition, were administered in doses of from 1 to 8 fluid ounces, and the effects carefully looked for, but there were absolutely none. He adds, in conclusion, that the Æthusa Cynapium of Sussex, Kent, Surrey, Essex, and Hertfordshire, is absolutely free from the noxious properties attributed to it.

— From an interesting paper on the Colours of Flowers, read before the Vaudois Society of Natural Sciences, by Professor Schnetzler, as abstracted in the *Times*, we learn that the generally received opinion that the various colours observed in plants are each due to a different chemical combination, without relation to the others, is erroneous, and that by isolating the colour of a flower in spirits of wine, one may, by adding an acid or alkaline substance, obtain all the colours which plants present. Thus, flowers of Pæony give, when placed in alcohol, a red-violet liquid; if salt of sorrel be added, the liquid becomes pure red; while soda changes it, according to the quantity, into violet, blue, or green. In this latter case the green liquid appears red by transmitted light, just as does chlorophyll. Without wishing to affirm it absolutely, he therefore concludes, that there is in plants but one colouring matter—chlorophyll, which, being modified by certain agents, furnishes all the tints which flowers and leaves present. It has been found that the coloration of white flowers is due to air contained in the cells of the petals, for on placing them under the receiver of an air-pump, they are seen to lose their colour and become transparent as the air escapes.

— At Kew several specimens of the Golden Scotch Fir, a form of the Scotch Fir with golden-yellow leaves (*Pinus sylvestris aurea*), are conspicuous at this season. This variety seems quite a free grower, and does not possess the unhappy look which many golden-leaved

forms assume. Moreover, it seems to have a tendency to keep smaller and to maintain a more dense and compact habit of growth than the type. As a single specimen on a lawn or in the foreground of the mixed ornamental plantation, where its beauty stands forth in contrast with the dark green of other Pines, &c., it is deserving the attention of planters. This golden colouring disappears to a great extent during summer, when the leaves acquire a yellowish-green tint.

— THE following mode of RAISING PALMS FROM IMPORTED SEEDS has been very successfully followed by Mr. F. Bausé, at Anerley. The seeds are sown in moderately strong soil in pans or square boxes, and covered thinly with soil; the boxes are placed in a good brisk bottom-heat, and the soil kept constantly moist, under which conditions some of the species germinate in six weeks, though some may take three months. As soon as large enough, they must be potted singly into thumb-pots, and plunged in a little bottom-heat. The young plants must be grown on in a warm moist atmosphere, and shifted into larger pots as required, using a moderately light sandy compost, and surfacing with sand. The young plants must never suffer for want of water, and if kept during summer in a strong heat, with a free circulation of air and moderate shade, and kept perfectly clean, they may be grown on into a good size within a year or so.

— FINE specimens of AGAVE ATTENUATA, a remarkable species, have been flowering in the Palm-house at Kew, to which place they had been removed from the Succulent-house. The crowns of very thick, fleshy, singularly glaucous, spathulate-lanceolate, entire leaves, from 2 ft. to 3 ft. in length, are borne on stems respectively about 6 ft. and 7 ft. in height, and from 3 in. to 4 in. in diameter. The arching flower stems, each 8 ft. or 9 ft. long, spring from the centre of the crowns, the spikes from the base upwards being successively beset with the long stamens and styles of the almost innumerable flowers. The barren portion of the scape is densely clothed with appressed lanceolate leafy bracts, and measures about 2 ft. in length.

— THE Japanese CLERODENDRON TRICHOTOMUM, which has, we suppose, long been lost to our collections, has been reintroduced by the Messrs. Veitch and Sons, and proves to be hardy, at their Coombe Wood Nursery. It forms a spreading, round-headed bush, about 5 ft. high, densely furnished with heart-shaped pale green leaves, 5 in. long by 4 in. wide, having the stalks and midrib covered with purplish velvety hairs. The flowers, which are borne in loose clusters at the end of each branch, are pure white, sweet-scented, and surrounded by inflated reddish-purple calyxes. It will be a valuable acquisition, being late-flowering, perfectly hardy, and growing freely in any good soil.

— THE handsome specimens of CHAMÆROPS FORTUNEI, which are such an ornament to the pleasure-grounds at Heckfield, were planted out in 1869. The height of their stems is 9 ft., extreme height to top of leaves, 12 ft.; girth of stems, a yard above the ground, 3 ft. 8 in. The leaves were a little cut last winter, but no permanent injury was done. A capital illustration in the *Gardeners' Chronicle*, taken from a photograph, gives a good idea of the effect these noble plants have in a garden, with their lower leaves drooping so as to almost cover their tree-like trunks.

In Memoriam.

— MR. CHARLES EDMONDS, late gardener at Chiswick House, which position he held for more than forty years, died at Llandudno on December 30th, from a second attack of paralysis, at the age of 69. He was a man of recognised integrity and sterling principle; and although he did nothing remarkable in the way of gardening, he was a sound and safe practitioner and adviser, and both on the Council of the Royal Horticultural Society, where he sat for many years, and as a judge at many metropolitan and provincial flower shows, and in various other ways, rendered loyal and real service to the profession. Those who knew him intimately will hold his memory in lasting and affectionate remembrance.

— MR. WILLIAM GORRIE, the well-known Scottish forester and garden architect, died suddenly on January 6th, in his 69th year. Mr. Gorrie, who came of a race of gardeners and tree-planters, was born in the Carse of Gowrie, but spent the greater part of his public life about Edinburgh, having been occupied as a land factor, subsequently as manager to the Messrs. Lawson's nursery, and latterly as consulting landscape gardener and forester. His numerous writings in the publications of the Highland and Agricultural Society and of the Botanical Society of Edinburgh, of which latter he was President during the past year, are well known, and he has passed away carrying with him the esteem and affectionate regrets of those who knew him.

— MR. JOHN SPENCER died at his residence, Calne, on January 10th, in his 72nd year. Mr. Spencer had been for the long period of 45 years in the service of successive Marquesses of Lansdowne, having been appointed gardener at Bowood, about 1835, on the recommendation of the late Joseph Sabine, Esq. At Bowood, Mr. Spencer occupied for many years one of the foremost positions amongst British gardeners, being often met with as an exhibitor at the great exhibitions, and subsequently as a judge. For some years previous to 1859, when he retired from that position, he had a seat on the Council of the Royal Horticultural Society, in which he was succeeded by Mr. C. Edmonds. He was a man of high and honourable character, much esteemed by his employer, who, in 1860, placed in his hands the entire management of his Wiltshire estates. In 1852 he assisted in founding, and jointly with Dr. Hogg occupied the position of Honorary Secretary to the British Pomological Society—an association which, after a few years of useful labour, merged into the Fruit Committee of the Royal Horticultural Society. Outside the gardening world, Mr. Spencer filled several important public offices in the county and district, besides which he was a geologist of no mean order, and a Fellow of the Geological Society. From 1854 to 1862, he was associated, first with Mr. Charles Turner, and subsequently with Dr. Hogg, in the proprietorship and management of the *Florist*, of which the second enlarged series, entitled the *Florist and Pomologist*, was commenced during his association with the work; of late years, however, his connection with horticultural literature has in a great measure ceased. Now, at the close of a lengthened and highly successful professional career, while the affectionate sorrow of many a personal friend will follow him to the grave, his memory will remain as a bright spot in the recollections of the past, and his name will shed a lustre over the pages of the garden history of our time.

J. L. M[illegible] del. Chromo P. Stroobant, Ghent

Polyanthus. 1, Sunrise. 2, Cheshire Favourite.

THE GOLD-LACED POLYANTHUS.

[Plate 533.]

IN the accompanying plate, we give representations of two very choice varieties of the Gold-laced Polyanthus—one new, a red-ground flower; the other old, but here made use of as an illustration of the more advanced form of the black-ground type. Both varieties were staged at the Auricula Show at South Kensington on April 20, 1881, in the prize collection of Samuel Barlow, Esq., of Stakehill House, Castleton; and the variety named "Sunrise" was, in addition, awarded the premier prize as a seedling, and also a first-class certificate of merit. Our figures were made by Mr. Macfarlane, from the prize plants on the day of the show. Mr. Barlow has been good enough to draw up the following historical memorandum concerning them.—T. M.

Fig. 1.—Sunrise is a red-ground Polyanthus seedling, which bloomed at Stakehill for the first time last spring. It is from *Bullock's Lancer*, crossed with *George IV.*, the result being a decided improvement on both parents. The red of the ground-colour is brighter than in either; the pip has the full form and the substance of *George IV.*, with the usual beautiful lacing of *Lancer*, the coarseness of lacing often seen in *George IV.* and the starry form of *Lancer* being both corrected in the new variety. *Sunrise* has only bloomed once, and as it was in its second season, it had formed a clump of five crowns, each of which threw up a truss, in none of which was there a flower faulty in any point; the flowers were, however, somewhat small, owing to the plant not having been divided in the autumn previous.

Fig. 2.—Cheshire Favourite is a black-ground Polyanthus, now well known among growers, of a good robust constitution, and hence has lived and thriven, whilst many of the delicate companions of its early days have died out, and are no more. The colours of black and yellow in this variety are all that a florist can wish for, and the lacing is always cleanly cut from the body colour; its fault is that the lacing often fails to cut *through* the centre and edges of each segment of the pip, but when one has the good-fortune to bloom it in correct style, Cheshire Favourite can scarcely be beaten. This variety was raised by Mr. Sanders, of Pickmere, near Northwich, Cheshire, and so far as I can learn, first appeared as a winner in 1844, although it had been in existence some years before.

The Polyanthus seems to lend itself more kindly to the lithographer than the Auricula. The accompanying picture is creditable to all concerned in its production, for although the foliage is not quite all that one could wish, it would be almost impossible to get a better representation of the flowers than is here given. —S. Barlow, *Stakehill House, Castleton, near Manchester.*

WHAT ZERO HAS TO SAY TO OUR FRUIT-TREES AND ROSES.

"SUFFER and die!" is its brief, harsh, hard message. Neither their nature nor our culture enables them to bear such severities with safety. Were zero temperature to become common with us, we should have to make fresh selections of fruits and flowers, and adopt new cultural expedients. We have only to travel a short way to the north of us through Europe, to gain confirmation of this. Most of the plants that we cultivate in the open air, have to be protected in Russia and Sweden. Being more highly favoured in the matter of climate, we become the more venturesome. Not only have we failed to make our fruits, flowers, and vegetables more hardy, but we are constantly making them more tender. Size and quality have been enormously developed, too often, it is to be feared, at the expense of constitution. Even liberal culture may be said to add to the tenderness of plants. Most cultivators are familiar with the fact that the weakliest-looking plants mostly stand climatal severities best. It is the fat Broccoli, the Roses with shoots half an inch in diameter, and the gross-grown fruit-trees that become the first food of the frost. And yet, year by year, the obvious lessons taught by such losses are forgotten. With the returning sunshine comes the usual forcing regimen, resulting in autumn giants, that prove pigmies indeed in the first grip of the cold. The time seems opportune for sounding a note in favour of sacrificing somewhat of the size to the safety of plants.

Size, after all, is of but little horticultural, and less artistic value. The importance attached to it among cultivators is a vulgar error, a remnant of the barbarous times, when tastes were so uncultured that only or chiefly size could command attention or secure notice. Even fruit-growers need to be reminded that

size and profit do not always run in couples; while most florists are well aware that Roses the size of cabbages, are about as useless for decorative purposes.

It may be answered that the rage for size has at least succeeded, and that with certain classes the biggest fruits, and even the largest flowers, always command the highest prices. No doubt, but even then size in the long-run does not pay, for in pursuit of it thousands of plants are killed that might have remained alive, and yielded a profitable return.

Of course, these remarks only or chiefly refer to plants in the open air. Under glass, with most of the more essential elements of climate under control, every one may follow his tastes without endangering his plants. But out-of-doors, all excessive feeding, anything like pampering culture, lessens our chances of maturing our plants before the frost is down upon them; and the touch of Zero on unripened wood is death.

Cultivators have a twofold object to accomplish in the all too brief months of sunshine vouchsafed to them. One is the gathering of the largest and best possible harvest of fruit and flowers that is produced; and the other, and even more important, is the thorough maturation—that is, the hardening of their plants. For it cannot be too often repeated that maturation does not merely mean hardness, but hardiness, and that immaturity means tenderness,—the risk of destruction being in the exact ratio of the degree of immaturity. What may be called medium culture, that is, moderate feeding and care, are favourable to maturity, and, therefore, among the wisest means to adopt to enable plants to endure even cold Zero's grip with comparative impunity.

As regards fruit trees, slight root-pruning in August is useful, as a ready mode of cutting off part of the surplus food of such fruit-trees as peaches and pears. The fruit may not be quite so large, but it will prove better flavoured, and the wood will be more ripe. Strong-growing Roses will winter better if subjected to similar treatment. I have observed again and again that Roses transplanted early in the autumn winter better than those not removed. They are less full of sap, which is the secret of their greater safety.

Such means are simple, and within reach of all cultivators. Much might also be done by the raisers of new fruits and flowers, such as Roses, making constitution a main point in all new varieties. What many of our Roses have gained in size and quality, not a few of them seem to have lost in constitution. Varieties and species have been mixed, till not a few of our favourites seem to have more Indian than English blood in their veins;—I beg pardon, buds. The more high the quality, the better the flower — too often the more tender; but the first quality for our rigorous climate should be hardiness of constitution, and the ability to survive contact with something near to zero temperature.

The same remarks are equally apposite to our superior fruits, such as peaches, nectarines, pears, plums, &c. Let these be as large and luscious as possible, by all means, but it is equally or even more essential, if they are to bear up against the occasional severities of our climate, that their character should be hardy, their constitution robust and vigorous. —D. T. Fish, *Hardwicke.*

NEW FRUITS & VEGETABLES.*

It is not a very lengthy task to pass in review the New Fruits of 1880; but although few in number, they are not the less important. The Fruit Crop of 1880 may be best described as a partial one—immense crops of some particular varieties, against total failure with others: a most abundant crop in one district, against a blank in others. The past has been moreover a year of specimen fruit; for the crop being light and the season favourable, the produce was in general remarkably fine.

Amongst Vegetables, we do not look for novelty, so much as for selection, since it is by careful selection that the purity and high standard of our vegetables are chiefly maintained. There are practically no new introductions, as in the case of plants, and but few that are the result of hybridisation, so that for any advance we must look to the selector almost entirely. Even in cases where the hybridiser is the means of introducing fresh blood or novel features, it is the selector upon whom falls the chief share of the work of fixing and maintaining the points of merit which have been arrived at.

* Abridged, with Additions and Variations, from the *Gardeners' Chronicle.*

New Fruits.

Grapes.—Amongst these, the grandest of our fruits, there has been nothing essentially new; but during the past year the great merits of *Gros Maroc*, recently figured by us, and which was introduced from M. Vibert, of Angers, by the late Mr. Rivers, so long back as 1855, were prominently recognised. It is very singular that this noble Grape should have remained so long without having its merits acknowledged. The fruit is large, black, and handsome, and is very good in quality, so that, even if not a late keeper, the variety cannot fail to be extensively grown.

Peaches.—These were almost a total failure in the open air, and no novelties were brought under notice. *Rivers' Sea Eagle*, a comparatively new variety, was remarkably well shown on one occasion from Trentham. Another of the same set, called *Goshawk*, has been noticed as large, free, delicious, and of good constitution.

Plums.—Mr. Rivers sends us an acquisition in *Grand Duke*, a large ovate, late-ripening variety, with reddish-purple skin, and very good in quality, which we shall shortly figure.

Cherries.—*St. Margaret*, an old variety, of the Black Bigarreau class, has been highly commended for its excellent late-keeping properties and first-rate quality. It deserves to be better known, for there is no late Cherry equal to it in quality.

Melons.—These were good and abundant during the past year. *Bellamore Hybrid Greenflesh* again proved truly excellent. *Blenheim Orange* (Carter and Co.) is, perhaps, the best scarlet-fleshed Melon yet seen—large, tender-fleshed, and excellent. *Welford Park* is a very handsome yellow-skinned variety, with pale red flesh, and of good quality. *Sutton's Hero of Lockinge* is a very beautiful variety, with tender white flesh, and very fine in quality; so that here we have Melons with flesh of all colours, and all excellent in quality, to choose from.

Apples.—There has been a great number of aspirants, but we have varieties so many and so good, that there is no place for anything that has not some exceptional merit. *Saltmarsh's Queen* is a large, handsome, culinary variety, possessing good keeping properties; the colour is pale yellow, overlaid with crimson, and marked with darker crimson streaks; the flesh juicy, with a mild acidity; distinct, but rather too strongly resembling Cox's Pomona. *Laxton's Schoolmaster*, which was raised, we believe, from an American variety, is another good culinary apple, of medium size; it is greenish-yellow in colour, with russety freckles, and crisp tender flesh. *Benoni*, an American variety

Blenheim Orange Melon.

introduced by Mr. Rivers, deserves commendation as a table fruit ripening in September; it is yellow, with a crimson cheek and streaks, and tender yellow, briskly-flavoured perfumed flesh, and, according to Dr. Hogg, should be found in every garden.

Pears.—There has been no actual novelty of any merit brought forward. *Auguste Jurie* received honours as a large, obtuse obovate, yellowish-green, well-flavoured variety, ripening very early (middle of August), and valuable on that account. *Vineuse*, a Belgian Pear, of some years' standing, of large size and most excellent quality, is deserving of mention; as is *Rivers' Fertility*, a new variety of great promise, obovate, bright cinnamon russet, with half-melting flesh and perfumed juice.

Raspberries.—*Baumforth's Seedling*, figured in our last volume, is recommended for its great size and productiveness, its fine colour, and its delicious flavour.

New Vegetables.

Peas.—These favourite vegetables have been much improved of late, thanks mainly to Mr. Laxton—who set the ball rolling in earnest, and who is now sending out two fine new varieties; one, named *John Bull*, a large-podded, blue wrinkled marrow, is of the same parentage as Marvel, and is remarkable for its fertility; the other, called *Minimum*, a very dwarf and productive early wrinkled white marrow, is a variety of excellent flavour. *The Baron*, another of Mr. Laxton's seedlings, long over-due, is this year to be sent out by Messrs. Veitch. *Carter's Pride of the Market* is a wonderfully fine dwarf round blue marrow, very robust, and an extraordinary cropper, like *Stratagem*, its twin-brother. *Day's Early Sunrise*, a dwarf white wrinkled marrow, is highly spoken of; and there are both novelty and considerable merit in *Tipping's Cleopatra* and *Distinction*, both tall green marrows, with large green peas, in broad curved pods.

Broad Beans.—*Carter's Leviathan Windsor* is an acquisition, being very prolific, with long and broad pods.

Broccoli.—*Ledshaw's White* is one of the hardiest and best varieties in cultivation, with small, solid, white, closely protecting heads.

Brussels Sprouts.—The trial of these at Chiswick served to show, in a remarkable manner, the decided superiority of certain stocks. The best were the *Aigburth* or *Otterspool*, of medium growth; *Dalkeith Improved*, dwarf and robust; *Scrymgeour's Giant Improved*, robust, with broad glaucous leaves; and *Crago's Favourite*, a fine dwarf sort.

Capsicums.—The *Yellow of Nocera* of Henderson is a very beautiful variety, the fruits large, yellow, and erect; but whether it is as useful as ornamental is not known.

Cucumbers.—Amongst these we have *Selborne Rival*, resembling Blue Gown, large and handsome; *Montrose Seedling*, and many more promising aspirants.

Onions.—The *Zittau Giant Yellow* of Benary is a fine-looking sort, and is said to keep well.

Shallots.—There is absolute novelty and improvement in *Pond's Jersey White*.

Beets. — Messrs. Rutley and Silverlock's *Green's Selected* is a very fine sort, and an acquisition.

Potatos.—The interest which has been taken in this most important vegetable has resulted in the raising of a great number of new varieties in this country and in America, so that we are literally overdone with them. *Dean's Lord Mayor*, a seedling between Early Rose and Early Market, is a large white roundish heavy-cropping variety. *Carter's Holborn Favourite*, of American origin, is a very handsome long flattened white late variety, and an enormous cropper. *Lye's Wiltshire Snowflake* is a large handsome roundish white variety, good in quality, and an immense cropper. These are regarded as some of the more important.—M.

ACER GINNALA.

In a very useful series of papers on the Maples, by Mr. Nicholson, now being published in the *Gardeners' Chronicle*, this plant is treated as a variety of *A. tataricum*. That, it is well known, is a small tree, growing from 20 ft. to 30 ft. high, and remarkable for its early leafing. The doubly serrate leaves are either three-lobed (in young trees), or usually more or less heart-shaped, acuminate, of a dark shining green above, paler beneath. The red samaræ, or winged fruits, which follow the small greenish-yellow flowers, are very attractive in September and October, and the abundance in which they are generally produced, renders the tree quite conspicuous in the landscape at that season. The autumn tints of the leaves are reddish-yellow and brown.

The variety *Ginnala* represented in the annexed woodcut, the *Acer Ginnala* of Maximowicz, a native of the Amoor river, has the leaves triangular-hastate, the divisions, especially the larger anterior one, being lobed and toothed. The leaf-stalks and midrib are red, and in autumn the decaying foliage assumes a splendidly glowing ruby-red colour, which in the sunlight is singularly beautiful. There is no other Maple so resplendent in its autumn hues, for which reason it should be planted in every collection of hardy trees. No more striking object for the front part of a shrubbery-

border could be desired. The contrast between the autumnal tints of this species and those of the North-American *A. rubrum* is very marked, *A. rubrum* displaying but little deep colour, only a leaf or two here and there changing to crimson, the prevailing tint being a bright clear golden-yellow.

Acer Ginnala.

Another variety, named *Semenowii*, the *Acer Semenowii* of Regel and Herder, a native of the valleys of Alatau in Russian Turkestan, is a slender, graceful bush, with reddish twigs and petioles, and leaves, somewhat like those of *A. Ginnala*, but smaller, glabrous, and of a shining green colour.—T. Moore.

MOSS-MULCHING POT PLANTS.

For want of a better name, we have given this to a practice that we have recently introduced into our greenhouse department. Some time about January 1st of this year (1880), one of our young men suggested mulching with moss (Sphagnum) a lot of Roses grown in seven-inch pots that had become somewhat exhausted by being forced for flowers for the holidays. Believing the idea to be a good one, I at once had a lot of nearly three thousand plants so mulched, mixing, however, with the moss a good portion of bone-dust—perhaps one part weight of bone-dust to thirty parts of moss. In two weeks the effect began to be easily perceived on all the Roses that had been so mulched, and without shifting they were carried through until May, with the most satisfactory results, many of the plants having by that time attained a height of four or five feet; and though they had bloomed profusely during a period of nearly six months, were in the most perfect health and vigour.

Believing that if this system proved so satisfactory in a plant requiring such careful handling as the Rose, it would doubtless do equally well with many other plants, we at once, almost without exception, adopted the moss and bone mulch on nearly every plant cultivated, whether planted out in borders or grown in pots, and the result, without a single exception, has been in the highest degree satisfactory. Among the plants so treated are Azaleas, Begonias, Caladiums, Carnations, Crotons, Dracænas, Eucharis, Gloxinias, Palms, Pandanus, Poinsettias, Primulas, Roses, hot-house Grape Vines, and hundreds of other kinds. All plants are mulched as soon as we can reach them, from three-inch pots upwards. In strong-growing plants the roots can be seen striking upwards into the mulch in four or five days after it is put on, and in nearly all cases within two weeks.

One great advantage is that by this system plants can be grown as large and fine in a four-inch pot as in a six-inch pot without the mulch, for the reason that the plant is now fed by the moss and bone from the surface of the earth—the best feeding point, as most cultivators of experience now believe. Another advantage of the mulching system is its great saving of labour; for it takes about one-fourth of the time to mulch the surface of a pot as it does to shift it. Another, its saving of watering—the moss acts as a sponge, retaining and giving out the moisture to the plant just as it is wanted. Another, that it crowds down all weeds, and does away with the necessity of stirring the soil in the pots or borders. Another and most important advantage to us who are packers is, that it lightens the weight of our goods by one-half—that is, we get as large a plant with half the weight of soil.

In my practice of thirty years I have never seen a method of culture that I believe to be of such importance; hundreds who have visited us this season have been equally impressed with its value; for the "proof of the pudding" is most apparent in its results. We have used already over twenty team-loads of moss and about one ton of bone-dust, but never before have we made an investment that has been so satisfactory.—Peter Henderson, in *American Gardeners' Monthly*.

AMERICAN PEACHES.

So many of the American Peaches prove to be desirable for cultivation in this country, and the experience gained of English Peaches by the mode of cultivation pursued in that country is so useful, that we are glad to print, in a somewhat condensed form, a Report on the varieties of this fruit cultivated in the Mount Hope Nurseries, published in the *Albany Cultivator*, which, with some additions, Mr. Barry has obligingly sent us.

Three years ago Mr. Barry planted an experimental orchard of some 114 varieties, which came into bearing for the first time and enabled him to test the leading standard sorts, besides many of the little known older kinds. The results of his observations are given below, as nearly as possible in the order of ripening of the several varieties. The season of 1880 was, it appears, remarkably favourable for the Peach crop in Western New York.

Early Peaches.

July 24th.—We gathered fine specimens of Briggs' Red May. This variety originated in California, and was one of the first of the very early sorts brought to notice. It has much the same character as Alexander and Amsden. Mr. Myers, a prominent peach-grower of Bridgeville, Delaware, however, says it is less liable to rot than either.

July 26th.—We have before us splendid specimens of Alexander and Amsden. The difference between them is very slight. Alexander, however, appears to average larger, and is less disposed to decay upon the tree.

July 27th.—We received a fine basket of Waterloo peaches, gathered from the original tree. These are fully up to the standard. Next year we hope to have fruit from our own trees, when the opportunities for comparison will be better.

July 29th.—We find upon our table a remarkable collection of peaches. Alexander, Amsden, High's Early Canada, and Harper's Early are ripe and beautiful. All these varieties bear a striking resemblance to each other. High's Early parts more freely from the stone than the others, and Harper's Early seems to excel in flavour.

August 2nd.—We sold Alexander and Amsden today at the rate of $3 per bushel. The specimens were superb, many measuring 8 inches in circumference, and weighing 4½ ounces.

August 4th.—Early Beatrice is ripe, but after enjoying such magnificent fruit as we have for the last few days, this small peach fails to give satisfaction. Mr. Myers writes that he has marketed thousands of bushels of this peach, and he finds it valuable; though small, it is produced very abundantly; the tree is hardy, and the fruit is exempt from rot.

August 7th.—Early Louise, now in perfection, seems to be a profitable market variety. Mr. Myers says that in Delaware the tree is remarkably productive, and when in bloom it is capable of withstanding, without injury, a greater degree of frost than any other.

August 10th.—That delicious peach, the Early Rivers, is now in fine condition for eating. In this vicinity it is, beyond question, the best variety we have. In one of my reports on peaches, I expressed the opinion that Early Rivers would not be of much value for market, owing to its thin skin and delicate flesh, but Mr. Myers, who for ten years has made a specialty of peach-growing for market, informs me that Early Rivers is the most valuable of any of the early peaches for market. It is a great satisfaction to be able to commend so choice a peach for both purposes.

August 15th.—Early Leopold is too small, and the quality too poor, to render it worthy of a place in a collection.

August 18th.—Rivers' Early York is the earliest freestone we have fruited. Fruit of medium size, good quality, and the tree yields well. Snow is a beautiful white peach, especially valuable for canning and preserving. It deserves more extensive culture.

August 20th.—Large Early Miguonne is of medium size, fine quality, and a freestone. The tree, loaded with fruit, presents a remarkably fine appearance.

August 22nd.—Hale's Early is ripe.

August 23rd.—Acton Scott, Early Rose, Early Savoy, and Belle Conquête are good peaches, but not large enough to be grown profitably. Belle de Doué, Belle Beauce, Grosse Mignonne, and Belle de la Croix have the highest flavour, and can be recommended to all who are seeking after delicious fruits.

August 25th.—Two of the best peaches in our collection are now ripe. I refer to Haine's Early and Large Early York—varieties which are undoubtedly identical. I have no hesitation in placing them at the head of the list, either for garden or orchard. George the Fourth is another high-flavoured peach, resembling the two last-named very closely. Cooledge's Favourite is one of the most valuable varieties. The fruit is not large, but handsome and of good quality, and the tree is so hardy that this peach will always be a favourite in the northern sections of this country, where many kinds fail owing to the rigorous and changeable climate. Mountain Rose, of recent introduction, promises to be desirable for market. It is not so richly flavoured as the above, but large and handsome.

August 31st.—Shanghai, a very large Chinese clingstone peach, is ripe, and is remarkable for its fine flavour and handsome appearance. The tree is exceedingly prolific, and the fruit is so showy that it will take well in market. Most of the specimens measured 9½ in. in circumference, and weighed 8 oz. It is a variety which merits attention.

September Peaches.

September 1st.—Early Alfred, Crimson Galande, Dagmar, and Pucelle de Malines are handsome, white-fleshed peaches of medium size; but ripening as they do about the same time as Crawford's Early and Surpasse Melocoton, they cannot compete with them, and we shall drop them from the catalogue. Crimson Galande, with its deep purple cheek, is very handsome, and a tree full of fruit is an interesting object to look upon. Crawford's Early, on account of its size and attractive appearance, maintains its reputation as one of the best peaches for market. Foster and Surpasse Melocoton are rivals which are steadily growing in favour, as both are superior to Crawford's in flavour, and they average equally large, if not larger. We had specimens of Surpasse Melocoton weighing 5¾ oz., and measuring 8⅝ inches in circumference; Foster weighed 5¼ oz, and measured 8⅝ inches in circumference; Crawford's Early weighed 5 oz., and measured 8¼ inches in circumference. Richmond, Dr.

Sylvester's seedling, does not prove satisfactory. Conkling is a large, fine, yellow peach. Alexandra Noblesse, one of the newer sorts, is an excellent large peach, raised by Mr. Rivers from the old Noblesse. Early Silver, from which the Early Rivers was raised, is a splendid variety, and deserves extensive trial. Magdala, Morning Glory, and Atlanta are medium-sized, white-fleshed peaches, but not large and attractive enough for market. Atlanta deserves attention from amateurs for its delicate flavour. The Wager peach, with yellow flesh parting freely from the stone, is said to be valuable for canning.

September 5th.—Morris White is still a favourite with orchardists.

September 10th.—Jacques' Rareripe, resembling Crawford's Early, may be esteemed in some sections of the country, but it lacks flavour here. Monstrueuse de Doué (Reine des Vergers), Chevreuse Hâtive, and Hieks' Seedling do not possess sufficient merit to render their cultivation advantageous. Goshawk, raised from Cooledge's Favorite, adds size to the many valuable qualities of its parent, and is certainly very promising.

September 12th.—Malta is a desirable peach for the amateur's garden. The flesh is juicy and melting, and the flavour all that one could desire, but the tree is not productive enough to justify us in commending it for market.

September 15th.—Leopold I., a Belgian variety, and Prince of Wales, one of Mr. Rivers' seedlings, are deficient in flavour, and we intend to drop them from our lists. Cole's Early Red will be treated likewise. Just now Brevoort is the best peach we have. Its flavour is delicious, and on that account it is certainly entitled to a place in every garden. The tree is only a moderate bearer, which would prevent its culture for market. Oldmixon Freestone is in first-rate condition for eating, and deserves to be, as it is, classed among the most valuable of peaches for garden or orchard. In addition to its many other good qualities, it has a rich flavour, which will always make it desirable. Stump the World, although a popular market peach, has not flavour enough to commend it to the attention of amateurs.

September 20th.—Susquehannah, a large yellow peach, has a rich, vinous flavour. Hill's Chili has been highly recommended, but the fruit is not large, and the flavour is indifferent. Late Morris White is a variety of Morris White, resembling it in every particular, but ripening ten days later. The Nectarine peach is, by all odds, the best of its season. It is said to have been raised from a stone of a Dutch nectarine called Grand Noir, and has a peculiarly delicious flavour. White Melocoton is a large, handsome peach, juicy, melting, and of good quality. Carmine has no flavour, and should be rejected. Red Cheek Melocoton and Mammoth Melocoton are fine, yellow-fleshed peaches. Raymacker's resembles Crawford's Late, and does not seem to be any improvement upon it.

September 26th.—Van Buren's Golden Dwarf is a large, yellow, clingstone peach, resembling Crawford's Late, of dwarf habit, and very prolific. Princess of Wales, raised by Mr. Rivers from seed of Pavie de Pompone, is a beautiful cream-coloured peach, melting, and of good flavour, valuable on account of its lateness. Crawford's Late continues to be valued as a late peach. Pool's Large Yellow, ripe at the same time, is a very large, yellow peach. The flesh is finer than that of Crawford's Late, and from what I have seen of this variety I think it deserves a good deal of attention. It seems quite an improvement on Crawford's Late. Of its bearing qualities I am not able to judge.

September 27th.—Lord Palmerston, another of Mr. Rivers' fine seedlings raised from the Princess of Wales, is very large, skin creamy white, with a pink cheek; flesh fine, juicy and rich, stained with red at the stone. It deserves careful trial, as it promises to be of great value to succeed Crawford's Late. Ward's Late Free is a desirable white-fleshed variety. Its flavour is excellent. Druid Hill, raised in Baltimore, has an exceedingly pleasant flavour. I should not hesitate to rank it among the best of peaches. It has an additional value in ripening so late, and it surpasses Ward's Late Free in flavour. Walburton Admirable is large, juicy, and delicious; a first-class peach in every respect. Heath Free is a choice late peach. McClane's White does not equal it in flavour. Carpenter's White is very good, and merits attention.

October 2nd.—Lady Palmerston will be valuable farther south, but is too late for this locality. This remark applies equally well to Smock Free, Salway Temple White, DeGrauw's White, Delaney Heath Cling, Jersey, Comet, and Jones' Seedling. Some of these in such exceptional seasons as that of 1880 ripen here pretty well.

A few trees did not produce fruit, which will account for the absence of some kinds from the list. Several varieties of the very early peaches show a disposition to decay, and their value is greatly lessened by this defect. Another year's trial will establish to a certainty the advantages which some sorts possess over others in this respect. As will be seen, several old peaches which have been neglected of late, have been found to possess qualities which will merit attention. This collection has been the most interesting that I have had the pleasure of examining. I hope that other fruit-growers will favour us with the results of their experiments, so that we may assist each other in determining which kinds to keep and which to reject.—W. C. Barry, *Rochester, N.Y.*

THE WIRE-WORM.

THIS is one of the most troublesome pests which the gardener has to deal with. There are several species of *Agriotes*, or Click Beetle, whose larvæ attack and destroy the roots of plants, and are confounded under the general name of wire-worm,—a name truly descriptive of its character, for it is clad in armour nearly as hard as iron, and over which the clod-crusher passes harmlessly. It is, indeed, very amusing to read that wire-worms embedded in soft earth will suffer anything from surface pressure. The clod-crusher does good service in its own sphere of action, but this is quite beyond its powers.

Leaving the farm to fight its own enemies, let us see what can be done in the garden, where some fine old turf introduced from pasture fields is well stocked with wire-worm, which must be got rid of. Hand-picking is not to be thought of, for good reasons, such as the cost in time and labour of overhauling even a few tons of soil; and the chances that the keenest eyes would pass over enough to establish a new colony. Although

the ravages of the wire-worm are best studied in the field, yet the garden is the spot in which to check its progress; and the way in which this may be done, I will now detail. The late Mr. Pince, of Exeter, one of the best nurserymen of his time, was annoyed to see the damage wrought by the wire-worm in his nursery; but cogitating one day, as he told me, on the character of the wire-worm, he concluded that to get rid of them he must have quick and willing workers, with sharp eyes. So, getting a dozen bantams, he set them to work on the worms. For this purpose, he ridged up the soil in a shed, and the fowls soon set to work tooth and nail; and as fast as the ridge was renewed, it was levelled again by the toes of his assistants, who evidently liked the game, and the fresh insects with which they were regaled. We have seen the rook following the plough for what it turns up, thus working like the bantam, for when the ploughshare rends the furrow it upturns many larvæ, which thus become a prey to the rook and other wild birds, and must be a great support to the rookery in the breeding season, assisted by the extra seed that some farmers cast away in thick sowing. —Alex. Forsyth, *Salford.*

MARKET CULTURE OF ASPARAGUS IN FRANCE.

THE following is a free translation of M. Dumas' recommendations on this subject in *La Culture Maraichère* (Rothschild, Paris), an excellent little handbook of gardening, to which we have already referred with commendation :—

The seed is sown in March or April in a light, highly manured soil, which should be well dug during dry weather. The soil being thus pulverised, the seed is sown broadcast, or in lines 4 to 5 inches apart, the latter method being preferable, taking care not to sow too thickly nor at a depth of more than 3 to 4 inches. In dry seasons watering may be necessary, and when the seed has germinated hoeing is requisite. The bed for the permanent plantations should by preference be sandy, deep, very friable, the best soil in the garden, and exposed to the south. It should be trenched and well manured. The ground being prepared in the manner indicated, in February or March a trench is dug, some 16 to 18 inches deep and as much in width, the soil being thrown out on each side of the trench to a distance of 16 to 18 inches. At the bottom of the trench so made, little mounds of fine earth about 4 inches high are made, at the distance of a yard one from another. Other similar trenches are dug at distances a yard apart. When all is ready the young Asparagus plants—preferably those of two years' growth —are placed on the little mounds in the trenches, the roots being carefully spread out over them, and fine soil is carefully sifted in between them. The trench is then filled in nearly to the top with compost, in which fowls' dung or night-soil has been mixed. They must, however, not be too deeply covered—in medium soils not to a greater depth than 10 inches the first year. During the autumn the plants should be watered freely with liquid manure. When frost is anticipated, the stems should be cut over annually about four inches above the surface, and as a protection, the whole surface covered with a layer of dung. The shoots are not cut till the third year, after which time, the shoots may be cut each year from April to July.

JASMINUM SAMBAC.

THIS plant is not so well known as it deserves to be, for the flowers are sweetly scented and of almost a pure white, and they are the more valuable as being produced through the autumn and winter months. This species of Jasmine is not difficult to cultivate, and by attention to the following instructions may be grown by an amateur, where there is the accommodation of a stove temperature, which is necessary to success. To begin with, take a young, healthy, well-rooted plant early in February; shift it into a pot one size larger, using plenty of crocks for drainage, and as a compost a mixture of fibrous peat and loam in equal parts, with a good sprinkling of sharp, gritty sand added. The soil should be made moderately firm, and the plant placed in a temperature of 60° to 65°, the syringe being used freely morning and evening, and due attention being paid to watering at the root—this being very essential, in order to get good, healthy plants, with strong shoots : moreover, bloom is more certain on strong wood. When the roots have taken to the new soil, give them manure-water once a week. By the end of May give another shift, and pinch out the tops of any shoots which may be taking an undue lead. Continue the general treatment as before. By the middle of October, flowers

Apple Ecklinville Seedling.

W.H. Fitch del.

P. De Pannemaeker, Chromolith. (Gand)

will begin to open, and will continue to be produced in succession for several weeks.

Cuttings of the half-ripened shoots will root freely at almost any time of the year; and old plants cut back, slightly reduced at the roots, and again started and treated as above recommended, will continue to produce flowers for several years.—H. Chilman, *Somerley Gardens, Ringwood.*

THE ECKLINVILLE SEEDLING APPLE.

[Plate 534.]

A TRULY noble Apple, which takes quite a foremost position amongst our culinary varieties. The sample represented, without exaggeration, by Mr. Fitch, in the accompanying figure, was grown by Lewis A. Killick, Esq., of Mount Pleasant, near Maidstone, a gentleman who has long since won his spurs as an advanced pomologist and successful hardy fruit cultivator. Nothing finer in the way of Apple-culture could be desired—scarcely imagined. We owe our best thanks to Mr. Killick for supplying us with so excellent an example for the purpose of illustrating the striking appearance of this highly meritorious variety. As its name implies, it was raised at Ecklinville, in the North of Ireland, many years ago, and it has of late rapidly gained ground in popular favour, now that its fertile proclivities are more fully understood, thanks to Mr. A. F. Barron, by whom the variety was observed in almost every garden in Ireland, some few years ago, and its good qualities were made known by him in the *Journal of Horticulture.*

The tree is an enormous and continuous bearer, and we believe it is also one of the very hardiest of apples, since it has stood without injury when other popular sorts have been seriously crippled by the late unfavourable seasons, and has gone on growing and bearing as if there had been no aberrations of climate to affect its health and fertility.

The fruit is of the largest size—always large, but our figure of course represents a fine selected and well-grown specimen, as the accompanying wood and foliage testify. Its form is roundish-oblate, becoming slightly angular about the eye, which is large, closed, and deeply set. Its colour is a bright but pale greenish yellow, a little flushed with red on the cheek, and sprinkled with distant russet dots; it is attached by a comparatively slender stalk, half an inch long, set in a cavity of about the same depth. The skin is very tender, with a soft greasy feel, and is liable to sustain damage in packing, which somewhat militates against it as a market fruit; indeed, it is most suitable for cultivation by amateurs, on account of its enormous and constant cropping qualities. The flesh is soft, tender, and delicate, white, with a brisk acid flavour, not keeping long in condition. It is, nevertheless, one of the best of culinary Apples, coming into use in September; indeed, it may be used off the tree, in the same way as Lord Suffield. The tree is of very distinct bushy growth, the young shoots being very thick, but not very long, and generally terminating with a flower-bud. It bears best as a low bush.—T. Moore.

VINES AND VINE CULTURE.

Chap. XVIII.—The Varieties of Grapes.

(Continued.)

THE descriptions of the varieties of Grapes included in our Synoptical Table are here continued, from page 20 (1881).

Espiran (82).—A round black vinous grape. *Synonym:* Esperione.

Vine.—Growth very free and vigorous, but never gross; the young shoots being rather slender than otherwise, of a reddish tinge, very rugose, and when ripe, often having the bark distinctly streaked with pale and dark brown; very fruitful. *Leaves* deeply lobed and toothed, rugose, the stalks and venation of a reddish hue.

Fruit.—Bunches from 9 to 12 inches long, tapering, with a large shoulder, always well set; stalk thin, but strong. *Berries* medium-sized, quite round, marked on one side with a distinct suture, and often leaving the style point at the apex. *Skin* thick, very dark purple, and with a thick coating of bloom. *Flesh* firm, not very tender or juicy, and generally with a somewhat harsh flavour, excepting when very highly ripened.

History, &c.—This is an old grape, long cultivated in this country. Mr. Aiton, of the Royal Gardens, Windsor, writing in *Transactions of the Horticultural Society*, in 1818, recommends it very strongly, and a very correct illustration of it is there given. Subsequent writers seem to have confused the Espiran with the Black Hamburgh, and in consequence it has attained a false popularity as an open-air grape of high quality.

Cultural Notes.—Requires treatment very similar to the Black Hamburgh to ripen its fruit properly. The plant is very hardy and vigorous, and the fruit colours long before it is completely ripe, which makes it appear a good outdoor variety, but it is never so sweet or pleasant to the taste as the Black Hamburgh, under similar conditions.

Season.—Mid-season.

Merits.—Quite third-rate.

Ferdinand de Lesseps (56).—An oval white Muscat Grape.

Vine.—Growth strong and vigorous, producing firm, strong wood, which is moderately fruitful. *Leaves* large, deeply-lobed, and cut, somewhat rugose.

Fruit.—Bunches small, tapering, with little or no shoulder, and closely set. *Berries* below medium-size, oval in shape. *Skin* very thin and tender, of a pale amber, or golden colour. *Flesh* tender, juicy,

remarkably sweet and pleasant, with a very pronounced aroma of the strawberry, which scents the atmosphere of the house wherein it may be growing.

History, &c.—This peculiar Grape was raised by the late Mr. Pearson, from a cross between Royal Muscadine and the Strawberry Grape, and was certificated by the Royal Horticultural Society in 1870.

Cultural Notes.—Will ripen in the same temperature as the Black Hamburgh, and under similar conditions.

Season.—Mid-season.

Merits.—First-class in quality, but too small ever to become much cultivated.

FOSTER'S WHITE SEEDLING (14).—An oval white Sweetwater Grape.

Vine.—Growth free and vigorous, the wood moderately robust, ripening freely, and always very fruitful. *Leaves* large, deeply-toothed and lobed, slightly downy, and dying off yellow.

Fruit.—*Bunches* medium-sized, well-shouldered; stalk slender, always remarkably well set. *Berries* medium-sized, oval. *Skin* thin, very clear and transparent, at first rather greenish, but changing to a greenish yellow when fully ripe, and occasionally having a tinge of cinnamon on the most exposed side. *Flesh* tender and melting, very juicy, sweet, and pleasantly flavoured. When, however, allowed to hang long after ripening, the skin becomes thick and the flesh hard.

History, &c.—This fine grape is a seedling raised by Mr. Foster, gardener to Lord Downe, Beningborough Hall, York, from a cross between the Black Morocco and the Sweetwater, and came from the same potful of seedlings as that which produced the variety called Lady Downe's Seedling. This was about the year 1835, but it was not sent out or distributed until many years afterwards, and its merits were not recognised until about 1860. It is now to be found in every collection.

Cultural Notes.—This is one of the very freest of all grapes, and one of the easiest to cultivate; it forces well, and succeeds along with the Hamburgh, or in good seasons will ripen well in a cold house. I have seen it with Mr. Dunn at Dalkeith exceedingly good as a late variety.

Season.—Early, or First Early.

Merits.—First-class in quality as an early Grape, a certain cropper, and one of the best white Grapes in cultivation.

FRANKENTHAL.—A synonym of Black Hamburgh: which see.

GOLDEN CHAMPION (16).—An oval white Sweetwater Grape.

Vine.—*Growth* somewhat gross, the young shoots being often very thick, but soft, pithy, and badly ripened; a moderate cropper. *Leaves* large, roundish, very deeply toothed, thick and soft, ripening off early of a deep yellow colour.

Fruit.—*Bunches* large, well-shouldered, ovate in outline; stalk stout and fleshy, that of the berry being stout and warted. *Berries* enormously large, obovate, slightly pointed, in some cases round. *Skin* thin, clear pale greenish-yellow, inclining to pale yellow when fully ripe. *Flesh* firm, very juicy, the flavour resembling somewhat that of a very sweet Black Hamburgh, very pleasant to the palate. It is a somewhat shy setter, and the berries are often subject to spot.

History, &c.—This noble-looking Grape is a seedling raised by Mr. W. Thomson, when gardener to the Duke of Buccleuch, at Dalkeith. It was raised from a Grape that was a cross between Champion Hamburgh and Bowood Muscat, and received a First-class Certificate from the Royal Horticultural Society in 1868.

Cultural Notes.—This fine Grape is somewhat difficult to cultivate. It is a free-grower in some places, but in others it makes very slow progress. It fruits best on young rods. At Dalkeith, it succeeded well with Mr. Thomson grafted on the Black Hamburgh.

Season.—Early.

Merits.—First-class in quality, but constitutionally weak and uncertain.

GOLDEN HAMBURGH (28).—A round white Sweetwater Grape. *Synonyms:* Busby's Golden Hamburgh; Luglienga Bianca.

Vine.—*Growth* moderately free and robust, the young shoots somewhat soft and pithy, and ripening badly; a moderate cropper. *Leaves* large, broad, and flabby, of a pale sickly green colour, as if in bad health, and dying off early.

Fruit.—*Bunches* above medium size, with broad shoulders, very loose and straggling, fairly well set. *Berries* large, roundish, occasionally ovate. *Skin* thin, pale yellow in colour. *Flesh* tender, melting (it might be termed squashy), sweet, but never rich. Requires to be eaten soon after ripening, as it speedily becomes discoloured and bad in flavour.

History, &c.—This was stated to be a seedling raised by Mr. Busby, gardener at Stockwood Park, Luton, and a cross between Stillward's Sweetwater and Black Hamburgh, but there is much doubt as to the accuracy of this statement. It is most probably an imported Grape. Luglienga Bianca, from Italy, as grown at Chiswick, proves similar in every respect, and this is most likely the proper name of this Grape. It was sent out by the Messrs. Veitch in 1857.

Cultural Notes, &c.—At one time this was the most popular of white Grapes, and was to be found in every collection. In the great vinery at Chiswick it succeeded extremely well for a good many years, but latterly it has not been so satisfactory, the bunches seldom setting well, and the berries being inferior. It does well grafted on Black Hamburgh.

Season.—Early, but not suitable for forcing.

Merits.—Second-rate, and unworthy of cultivation.

GOLDEN QUEEN (88).—An oval white Vinous Grape.

Vine.—*Growth* remarkably strong and vigorous, the shoots strong, ripening well, and very fruitful. *Leaves* large, broad, deeply-toothed, thick, deep green, and remaining long in a fresh green state.

Fruit.—*Bunches* medium-sized, long, regularly tapering, on very long but rather thin stalks, thickly set. *Berries* above medium size, ovate. *Skin* thick, of a pale greenish-yellow colour, very often of an ashy paleness, and most uninviting. *Flesh* rather soft and squashy, sweetish, with a faint trace of Muscat when well ripened, but generally very deficient in flavour. A very handsome grape when well grown.

History, &c.—This is a seedling raised by the late Mr. Pearson from Alicante, crossed by Ferdinand de Lesseps. It received a first-class certificate from the Royal Horticultural Society in 1873.

Cultural Notes, &c.—One of the most vigorous-growing grapes in existence, and one that bears fruit freely, but it requires as much time and quite as much heat as Muscat of Alexandria to ripen it thoroughly. The best examples I have ever seen were grown by Mr. Anderson, Oxenford Castle, and these were ripened along with Muscats.

Season.—Late; will hang long after ripening.

Merits.—Second-rate; scarcely worthy of cultivation.

—A. F. BARRON.

ODONTOGLOSSUM CERVANTESII.

THE Cervantes Odontoglot is a native of Mexico, and was introduced into England about the year 1845 by, it is believed, the late Mr. Barker's collector. It has, therefore, been for a long time an inhabitant of our stoves. It belongs to a group designated by Dr. Lindley as the white-lipped Odontoglots, and is, perhaps, one of the most beautiful of the group which, according to the same authority, comprises, amongst others, the following, namely, *O. maxillare*, *O. rubescens*, *O. Rossii*, and *O. stellatum*.

ODONTOGLOSSUM CERVANTESII.

These, with most of the other kinds of *Odontoglossum*, are found to do best in a cool house. They should be potted in good fibrous peat, with an admixture of clean sphagnum-moss, the pots being quite half filled with clean crocks. Water may be liberally supplied during the growing season, and should not be entirely withheld even in the resting season. The temperature should range from 45° to 55° Fahr., when fire is used; but with sun-heat, and in the growing season, a temperature of 70° or 80° will be quite congenial to them. In growing orchids of all kinds, it is all important that the plants and houses in which they are grown should be kept scrupulously clean. No green slime should ever be allowed to collect on the pots, or on the shelves of the house, and the plants should be kept free from insect pests. A clean house and a sweet, moist atmosphere, are amongst the greatest helps to successive Orchid-culture.

The species whose name stands at the head of this paper is one of very pleasing character, being of a neat habit, with ornamental flowers. Its ovate angulate pseudobulbs bear a solitary oblong leaf, and a few-flowered scape. The flowers are large, sweet-scented, bluish-white, with oblong-lanceolate sepals, broader and more ovate petals, and an ovate, cordate acute lip, which is self-coloured, while the bases of the sepals and petals are marked by concentric reddish-brown bands. The variety *membranaceum* has white flowers, with the lip deeply cordate and retuse, but otherwise much resembles the type. Both are desirable orchids for general cultivation.—G. EYLES, *Kew*.

TOMATOS FOR AMATEURS.*

THERE are hundreds of suburban and country residences in the gardens of which are to be found a small range of houses, comprising, perhaps, a vinery, plant-stove, and a greenhouse, or there may be but a vinery and a plant-house. In each of these houses a few Tomatos may be grown, and that without entailing the sacrifice of but few of or injury to the ordinary occupants. The houses being small, small-fruited varieties should be grown, and I know of none better for the purpose than Vick's Criterion, which is well adapted for fruiting in small pots.

For an early crop in a plant-stove or early vinery, sow the seed thinly early in February (amateurs are apt to sow very thickly) in well-drained 6-in. pots or pans, using fine, light, sandy soil, and covering lightly with some of the soil. Water through a fine rose pot, cover with slips of glass, and place the pots either in a hotbed, or on a stage over the hot-water pipes. Do not allow the soil to become dry, and at the same time avoid saturating it. When the seedlings appear, take off the glass, and before they become drawn and weakly, transfer them to a warm shelf near the glass. Pot off when they have made leaves other than seed-leaves, using 4-in. pots (large sixties) and soil, previously warmed, consisting of equal parts of fine loam and sifted leaf-soil. Having shaken out the plants, select the best, and rather more than will eventually be required; and after having placed a little of the roughest of the soil over the drainage, put a single plant down the side

* From *The Tomato, with Cultural Directions for Maintaining a Continuous Supply of Fruit.* By W. Iggulden, gardener to the Right Hon. Earl of Cork and Orrery, K.P. (171 Fleet Street). A comprehensive treatise on the culture of this now popular esculent, and one which is likely to prove useful to those who may not have given particular attention to the subject, especially to amateur cultivators.

of each pot, burying as much of the stem below the seed-leaves as possible, lightly pressing it or jarring it down. Water them in, using tepid water both now and at all times; assign them a warm position, and shade from bright sunshine till they are rooted afresh. When this is found to be the case, return them at once to the shelves, and cease shading, in order to prevent their becoming drawn.

When they are grown into sturdy plants about 6 in. or rather more in height, shift them into fruiting pots, which may be 9 in., or a size larger. Drain lightly, especially if coarse soil is used; a suitable compost being two parts turfy loam and one of half-decayed manure, broken up finely. Failing turves, use the best loam procurable, rather more manure, or some leaf-soil, and mix in a few broken crocks, to keep it porous. When potting, which is best performed in the house in which they are growing, unless a potting-shed is adjoining, place some of the coarsest of the soil over the drainage, and pot rather deeply, allowing one-third of the depth of the pot for future top-dressing.

The plants may be dotted thinly amongst the other plants on the front stage, if the house be high-fronted; and if low, on the back or central staging, and staked uprightly and strongly; or they may each have a wire taken up the roof, about 9 in. clear of the glass, allowing two plants to each light, and cutting out all side-shoots as they form. If the point or head is occasionally taken out beyond a bunch or pair of bunches, it will improve and accelerate the ripening of the fruit. Give a good top-dressing of equal parts of loam and manure when the first fruits are set, and another top-dressing of good manure later on. When the fruit is swelling, the plants should be carefully watered, and be given abundance of liquid manure. These small fruiting varieties are mostly very prolific, set freely, and if well attended to, will continue fruiting for a long time.

Those without a stove or forcing-house of any kind, but who possess a vinery or a cool plant-house, should, if possible, rear their plants in a frame over a mild hot-bed, sowing early in March. Failing a hot-bed, the seed should be sown early in April, the pots being covered with glass and placed on a shelf and shaded. Although these will make slow progress, they will be ready for their first shift early in June. In the vineries they may be fruited on the end shelves or staging, or on the back walls; and in the greenhouses, as advised for the early plants in stoves. They may also be put into larger pots, and be allowed to ramble over back walls, or be trained up pillars, and a variety of other positions, according to the internal arrangements of the house. Crowding the plants, and allowing them to grow unchecked, are very frequent causes of failure, and cannot be too often spoken against. A few strong, leading stems, with all side shoots kept constantly rubbed out, are the most capable of carrying and perfecting good crops.

Tomatos will be found by no means unsightly, if grown on the front walls of villas; and if nailing is objected to, each plant may receive a strong stake, should there be no wires to train to. Some of the smaller-fruited varieties, such as *Nesbit's Victoria*, *Queen of the Tomatos*, *Burghley Pet*, *Red Cherry*, *Yellow Cherry*, *Turk's Cap*, *Royal Cluster*, *Red Currant*, *Grapeshot*, and others, may be trained up pillars of porticos and also of conservatories, where they will not only be found highly ornamental, but will produce fruit of excellent flavour.—W. Iggulden.

FICUS EXSCULPTA.

This is a very elegant stove shrub, its leaves, as will be seen from the annexed figure from Mr. Bull's *Catalogue*, being curiously compounded, though not compound in the botanical sense. It comes from the South Sea Islands, where it forms an evergreen bush, with woody branches, which are furnished with shortly-stalked leaves of a broadly lanceolate outline. These leaves are bipinnatifidly divided, with remarkably broad wings to the costæ and ribs, so that the outline very much resembles that of some of the more compound-leaved oaks, the blade being first deeply sinuate-lobate, and the segments again sinuately-lobed, thus producing a prettily cut margin, "the curious crenations," as Mr. Bull observes, "giving the leaf the appearance of having been stamped or punched out." The

fruit, it will be seen, is small, roundish, and about the size of a large pea. The beauty of the plant resides entirely in its foliage, which is very prettily cut, so that young freely-grown plants have a very elegant appearance in a collection of choice foliage plants. Like the rest of the Figs, the plant grows freely in the ordinary, well-drained peat and loam compost, used for choice subjects.—T. M.

Ficus exsculpta.

SUBURBAN GARDENING.

MARCH, the month of keen easterly winds, has been aptly termed the "loud-voiced blusterer," because of its boisterous character, but it is a month that admits of many garden operations being carried out, because generally fine and open. The month of February has been generally unfavourable to garden work, fog and damp, with heavy sunless skies, having prevailed, and it has been difficult to till the ground. Gardeners long for the fine weather that is slow to come, and gardening operations wait for favourable weather.

Kitchen Garden.—Sowing is now the gardener's order of the day; but he must first get his ground in order, and fine weather and a drying atmosphere are necessary. The amateur's selection of *Peas* should consist of *William I.*, *Advancer*, *G. F. Wilson*, and *Premier;* these are all dwarf-growing wrinkled varieties of great merit, and may be sown successionally up to the end of May in the south, and to the end of June in the north, where the climate is moist, and mildew is not so destructive. Of *Beans*, sow the *Seville Long Pod*, *Beck's Dwarf Green Gem*, and *Johnson's Wonderful. Potatos* should be planted without delay, and some autumn-sown *Cabbages*, *Cauliflowers*, and *Onions* planted out, where there is a little room to spare. In many suburban gardens the space is limited, and only a few leading vegetables can be grown. Some *Cabbage*, *Cauliflower*, *Lettuce*, *Spinach*, *Radishes*, *Mustard* and *Cress*, *Bore-*

cole, and *Onions* must, of course, find a place in the garden. *Broccoli*, *Dwarf* and *Climbing Beans*, *Savoys*, *Carrots*, *Parsnips*, *Turnips*, *Beet*, and other things, must be provided for as space offers. As sowing proceeds, the ground should be raked over neatly, so that the Kitchen Garden may be a sight pleasant to look upon. Where there is a garden-frame to spare, a few *Ashleaf Kidney* or other *Early Potatos* may be planted, to give an advance crop.

Fruit Garden.—So far, there is every promise of a good crop of fruit. The trees generally are one mass of flower-buds, and gardeners are looking hopefully towards the approaching summer. On the whole, trees are fairly well backward, but a warm, though windy, March would greatly accelerate the development of the blossom-buds. No time should be lost in having the Fruit Garden made tidy, supposing that all pruning operations are suspended. We have found traces of American blight on a few of our apple-trees, but a slight dressing of paraffin, well diluted with water, will soon get rid of the spoiler.

Flower Garden.—The recent severe frost has left its mark in the flower garden, and it will be many weeks ere we shall fully realise the destruction wrought. Such things as *Wallflowers*, *Sweet Williams*, and other hardy plants, especially those that bloom in spring, have suffered severely, and will have to be replaced. Amateur gardeners who have no reserve of plants will find some difficulty in filling up blanks, as hardy plants will be scarce, owing to the deadly effects of the frost. Then the summer display must be thought of. We will presently treat of the bedding-plants in the greenhouse and frame. A frame with a gentle bottom-heat is of great service just now, as there are many things that can be raised by its help for service in the flower garden in summer. *Stocks*, *Asters*, *Helichrysums*, *Zinnias*, *Nasturtiums*, &c., can be raised in this way, so as to have good plants to put out in May and June. The suburban gardener can do but little in the way of raising plants from cuttings, unless he has a small propagating-pit at his disposal, and a brisk heat, in which to push on the plants into size. Bedding-plants are rarely satisfactory, unless they are strong and well hardened off. Thus it is that the half-hardy annuals we have named are of such good service, because they are rapid growers and can be got into size in a short time, whereas, to strike cuttings of *Verbenas*, *Heliotropes*, *Fuchsias*, *Pelargoniums*, &c., and get them into size for planting-out is a work of time. In raising these seeds, care should be taken that the plants do not become drawn; and as soon as they are large enough to handle they should be pricked off into boxes or pans, two or three inches apart, and hardened off in a cold frame. Towards the end of the month, a few good useful and showy annuals may be sown in the open air, in rich, light soil.

Cold Frames.—These are now as the nurseries of the greenhouse, and furnish many subjects to make it gay. All the hardy *Primrose* family are moving into growth, though slowly, and with them *Hyacinths*, *Narcissi*, *Tulips*, and many early-flowering, hardy plants. Watering must be attended to, and all necessary light and air given. All the subjects that can be top-dressed, as one does Auriculas, will be greatly benefited thereby, and if time allows, the pots should be well cleansed also.

Greenhouse.—Cold houses have come very badly out of the recent severe tussle with old Father Winter, and many plants, despite the employment of heating appliances, have gone down in the struggle. Even with the aid of what we believed to be the best of the modern oil-lamps for heating purposes, the frost would not be stayed, and we have lost nearly every plant of a tender character. We have now to fall back on the cold frame for a fresh supply. Where the plants have been preserved through better heating-power, they will be beginning to grow, and now attention must be given to such as require shifting, and those not requiring this operation will be greatly benefited by being top-dressed. The shelves of the greenhouse should now be thoroughly cleansed, so that the plants can be properly arranged for the growing-season. After repotting, top-dressing, and rearranging are done, it is well to keep the house close for a few days; and should the weather be fine and sunny, an occasional syringing will be of much benefit to the plants.

Any bedding-plants, or those required for greenhouse decoration during the summer, that are in store-pots, should be potted singly into small pots and placed in a favourable part of the house, where they can receive encouragement to grow. At this season of the year the young plants are apt to become affected with green-fly, and an occasional smoking with tobacco-paper or rag will be found to benefit them.—Suburbanus.

GARDEN GOSSIP.

The Annual General Meeting of the Royal Horticultural Society took place on February 8th, Lord Aberdare, President, in the chair. The attendance was small, and but little interest was manifested in the proceedings. The result of the ballot for Council and Officers was to return Lord Aberdare as President, Henry Webb, Esq., as Treasurer, and Dr. Hogg as Secretary; and J. T. D.Llewelyn, Esq., J. McIntosh, Esq., and G. F. Wilson, Esq., F.R.S., were elected new members of Council, which is thus strengthened by men having strong and well-known horticultural sympathies. The Report of the Council, taken as read, congratulated the Fellows on the steady improvement of the Society during the past year, the number of Fellows and the receipts from all sources having in-

creased. The continued efficiency of the Chiswick garden and of the labour of the several committees were made subjects of gratulation. In the vegetable department, collections of Aubergines, Capsicums, Brussels Sprouts, and Parsnips, have been grown, and when the several reports are published we shall learn how to correct erroneous nomenclature, and to discard worthless varieties. Collections of Pelargoniums, Fuchsias, Gloxinias, Begonias, Pompon Dahlias, and a number of miscellaneous plants have also been examined, and special attention has been given to the varieties of tuberous-rooted Begonias as decorative plants; ten seedlings raised by Mr. Barron have received First-class Certificates. The Society now possesses, perhaps, the most extensive and complete collection of the species and hybrid forms of the genus Pelargonium that is to be found in this country. Of the shows of specialities fostered by kindred associations, the Report states that the Auricula Society's Exhibition was very well attended, and excited great interest; the Society's Rose show and the Pelargonium Society's show were held in conjunction, and were in every respect a success, the show of Pelargoniums being the best hitherto held; the Carnation and Picotee Society's show, and the exhibition of the British Bee-keepers' Association, which were held simultaneously, attracted many visitors; besides which, the exhibition on Whit Monday for flowers grown specially for Covent Garden Market was visited by upwards of 19,000 persons; and that on the August Bank Holiday, for flowers grown by artisans and cottagers, was attended by 11,370. The roll of Fellows now consists of 808 life Fellows, 435 Fellows paying £4 4s. annually, and 860 paying £2 2s. annually. The number of members paying 1 guinea annually is 87.

— The Schedule of the Manchester Great International Horticultural Exhibition, to be held on August 24th, 25th, 26th, and 27th, is now issued; and handsome prizes are offered, both for Fruits and Flowers. In the open class for collections of Fruits, the prizes amount to £125; for Grapes alone, £106 are given; Pine-apples, Peaches, Nectarines, Apricots, Plums, Pears, Apples, &c., have £182 allotted to them; fruit-trees in pots, £30; fruits of foreign growth, gold medals and money prizes to the value of £143; cut flowers, bouquets, and table decorations, £208; besides the prizes given by the National Rose Society and the Carnation Society, who each issue separate schedules for exhibitions of their special flowers to be held at the same time; plants, £638; vegetables, £113. Amongst the leading prizes are:—£20 for 15 kinds of fruit; £12 for 10 varieties of grapes, one bunch of each; £10 for six pine-apples; £10 for 20 sorts of vegetables; £20 for 20 miscellaneous plants, flowering and fine-leaved; £20 for groups of miscellaneous plants, arranged for effect, amateurs and nurserymen showing separately; £12 for 12 new plants; and £15 for a dinner-table, laid out for 12 persons. The General Horticultural Company (John Wills), Limited, offer 30 guineas and 20 guineas for six kinds of grapes, two bunches of each; and 30 guineas and 20 guineas for 12 dishes of fruit. There are 10 Veitch Memorial prizes, of £5 each, with a medal, offered for various Flowers and Fruits; and other special prizes are to be given by Messrs. Sutton, Messrs. Dicksou, Brown, and Tait, Messrs. Dickson and Robinson, and Messrs. G. and W. Yates. There are in the schedule 237 classes, the prizes reaching a total of about £2,000.

— Mr. Pettigrew's Handy Book of Bees (Blackwood and Sons) commends itself to the notice of bee-keepers, as a plain, practical, and perspicuous treatise on bee-management—as one which may safely be recommended to country residents and others who may be desirous of obtaining reliable information on the subject. The issue of a fourth edition is itself good evidence of the value of the work. The volume is neat and convenient in size, and the contents are divided into some thirty-four chapters, devoted to such subjects as the natural history of bees; the bee-garden, or the pasturage of bees; the hives, supers, nadirs, and other requisites of bee-keeping; the swarming, feeding, and other details of bee-culture; the diseases to which the busy little insects are subject; the enemies they have to contend with; the selection of stock hives, &c. All this and much more is fully and lucidly explained; while to the present edition has been appended a supplement, containing, amongst other useful additions, a calendar of bee-management.

— The following mode of dealing with Frozen Potatos, cut from a Scotch newspaper, is worth reprinting — Mr. Gordon, Curlusk, Boharm, on opening one of his Potato pits, found that the frost had penetrated through the earth, and frozen the Potatos into a solid mass. He put about forty bushels of them into bags, and placed them in the bottom of his mill-dam. After remaining there three days they were taken out, and put between layers of straw and dried, and were found to be as fresh and good as ever.

— In reference to the list of Select Potatos published at p. 20, Messrs. Carter and Co. ask us to state that they exhibited the Scotch Champion Potato before the Royal Horticultural Society, in December, 1879, and that a First-class Certificate was unanimously awarded to it. They add:—"Those who so freely abused this excellent Potato, would have fared but badly during the past and present season if its cultivation had been restricted; for it is a fact that this Potato is almost exclusively used in all the best *restaurants* in London, and the manager of one of these establishments, to whom we have supplied a large quantity of our select Scotch Champion, informed us that his *chef* pronounces them to be the best Potato he has ever cooked."

— Mr. H. Cannell, of Swanley, sends us flowers of a pretty and novel variety of Primula sinensis, a large, well-formed, stout, fringed flower, in which the centre portion is white, with a yellowish-green eye, and the outer part, for about one-third the width of the limb, is laced with a clear pale rose-pink. The effect is very chaste and pleasing.

— The Rev. C. Wolley Dod, writing of the Double Lychnis, describes it truly as a very ornamental and very hardy garden plant, of easy cultivation, provided it is frequently renewed, otherwise the shoots become so crowded as to exhaust one another, and the plant dies. The best is the double scarlet, *Lychnis chalcedonica;* the double white variety is not so good, not being pure white. These should be treated like tall Phloxes, and increased by cuttings, which will strike at any time; the best are those taken off close to the root in spring, when about 3 in. high. There are other kinds, all varieties of native plants—namely, the double of the common Rose Campion, *L. diurna* or *dioica*, which makes luxuriant growth anywhere, but flowers best on a rockery; the double white Campion, *L. vespertina*, which is less free in its growth; the double white

Ragged Robin, *L. flos-cuculi*, which increases fast, and is a very neat and elegant plant; and there is in cultivation double red *L. flos-cuculi*, for which he has long looked in vain.

—One regrets to hear of the dispersion of such fine specimens as the Constable Burton Orchids, in consequence of the death of the late owner, James MacLaren, Esq. They comprise such plants as Cattleya Trianæ, with 109 stems and twenty leads; C. Trianæ Dodgsoni, a mass nearly 5 ft. across, with twenty-one leads; C. Mossiæ, many fine varieties, with thirty to sixty-five stems; C. Warneri, one or two enormous plants, with fifty to seventy stems; C. Skinneri, masses with seventy to a hundred stems, 2½ ft. to 3½ ft. across; Cœlogyne cristata, 4 ft. across, and 2 ft. high; Dendrobium moniliforme, 4 ft. across; Saccolabium retusum, or præmorsum (?), marvellous plants, with twenty-eight to thirty-four leaves, 12 in. to 20 in. long, and masses of vigorous roots drooping and clustered round their stems, 4 ft. or more downwards; S. guttatum, nine stems, seventy leaves; Dendrobium densiflorum, with 250 stems, and 4 ft. across; D. Pierardi latifolium, fifty stems, some of them 3½ ft. long; D. Devonianum, thirty-five and forty stems, 3 ft. to 4 ft. long. Over 180 specimens in all.

— Some Early Snowdrops were in bloom at Chiswick on New Year's Day. The variety was an early-blooming form of Galanthus nivalis, which originated at Dunrobin, and which is usually in bloom from ten days to a fortnight before the common form, the early habit being apparent also in the earlier appearance of the leaves. Referring to the above, the Rev. H. Harpur-Crewe writes, —"I have two Snowdrops which bloom long before Mr. Melville's Early Dunrobin. The first, which was found by Lord Walsingham, on the Albanian mountains, north-east of Corfu, always blooms from the middle of October to the middle of November, which is almost immediately succeeded by the little Corfu variety, which goes on blooming till Christmas and the middle of January. Both appear to be mere forms of G. nivalis."

— Mr. Daniel Judd, on relinquishing the charge of the gardens at Warwick Castle and leaving the neighbourhood, was recently presented with an elegant timepiece and a handsome gold scarf-pin, by a few of his friends at Warwick, as a mark of their esteem and respect.

— The Polystichum tripterum, a most distinct and well-marked fern of great elegance, found in rocky places on the shady hills of Japan, has recently been brought into cultivation by Messrs. Veitch and Sons, of Chelsea, and is sure to become a favourite with fern-growers, on account of its refined habit, and evergreen character. From a short, erect caudex springs up a tuft of fronds, which are from 1 ft. to 1½ ft. long, with a lanceolate terminal branch or pinna, and two shorter lateral branches standing right and left at the base, so that it may be described as three branched, or ternately-bipinnate. The lower branches are 4 to 6 inches long, with subsessile, falcate, acuminate, auriculate, inciso-lobate or strongly toothed pinnules, those on the posterior side being considerably larger than those on the anterior. The longer central branch consists of numerous closely-set, dimidiately-oblong falcate, attenuated, auriculate, subsessile pinnules, 2 inches in length at the widest part, having the margins, especially on the anterior side, deeply incised towards the base with sharply-toothed lobes, which become smaller near the apex, and the teeth being everywhere bristle-pointed. Being a native of Japan, it may be expected to be hardy in all favourable situations.

— Perhaps the best White Zonal Pelargonium is a new one, called Eureka by Mr. Cannell, but to which the raiser, Mr. Windsor, of North Cray, had given the inelegant name, "I've got it." It was awarded a First-class Certificate by the Floral Committee at South Kensington on January 11th, and is no doubt the purest white-flowered variety yet raised, a very free bloomer, and most persistent in holding its petals, on which account it will be extremely useful to market growers and decorators.

— The Sweet Spanish Capsicum, when used for culinary purposes, should, according to a note in the *Journal de la Société Nationale d'Horticulture de France*, be roasted over a moderate fire till it will readily part with its skin, when it may be sliced for use either in salads or as a garnish. The fruits of the variety called *doux d'Espagne* by the French are very large; those of the *gros carré doux*, short and four-cornered, but very thick and fleshy.

In Memoriam.

— Mr. Peter Bassett died on January 13th, at Tetbury, in the 84th year of his age. He was for thirty-six years gardener at Westonbirt, the seat of R. S. Holford, Esq., and was known as a successful grower of Orchids.

— Mr. Peter James Perry, of the Banbury Nursery and Horticultural Building Establishment, died on January 23rd, in his 45th year. He has successfully carried on the business for the last 26 years.

— Rev. John Brooke died on January 27th, at Haughton Hall, near Shifnal, aged 78. He was a keen and accomplished botanist, and an enthusiastic horticulturist, having for many years kept up at Haughton one of the largest and most interesting collections of hardy herbaceous and greenhouse plants and bulbs in the Midland Counties. He was, moreover, an English gentleman of the good old type, now, alas! rare to be found.

— John Gould, Esq., F.R.S., the distinguished ornithologist, died on February 3rd, in his 77th year. He was a native of Lyme, in Dorsetshire, and at an early age showed a strong taste for the study of Nature. Between the ages of 14 and 20 he spent most of his time under the care of the late Mr. J. T. Aiton, at the Royal Gardens, Windsor, where he soon acquired a taste for botany and floriculture. In 1830 he commenced the series of magnificent illustrated publications on birds which he continued down to his death, and which have made his name familiar. Everybody must have heard of, and many must have seen, Gould's unrivalled collection of Humming Birds.

W. H. Fitch. del.

Chromo P. Stroobant, Chent.

Hellebores

1 P.R.Barr. 2, punctatissimus, 3, rubidus.

4 T. S. Ware. 5 Commerzienrath Benary.

NEW HELLEBORES.

[PLATE 535.]

ONE of the most interesting families of hardy spring-flowering plants is that of the Hellebores, *Helleborus* of botanists, of which we now give a plate of some fine new varieties which have bloomed in Mr. Barr's inimitable collection of these plants—which he calls Lenten roses, since they are generally in full blossom during the season of Lent. Coming in with the new year, when *H. niger*, the Christmas rose, is in full beauty, the different forms of this early-blooming genus afford a succession of flowers up to Easter, and though somewhat dull in colour, the whites and purples and rosy tints are really effective and attractive, especially where the plants are allowed to grow on into well-established tufts. They also do well under pot culture.

Fig. 1. PETER RUDOLPH BARR is the finest of a batch of seedling plants sent to Mr. Barr by M. Leichtlin. It belongs to the orientalis section, and to the group which specially represents orientalis itself, namely, a set in which the sepals are smoothly imbricated and moderately expanded. The flowers are very large, the sepals roundish-ovate, much overlapping, of a deep plum-purple, with a glaucous bloom outside, and thickly dotted with darker spots over the whole inner surface, the spots distributed in close-set rows, and sometimes coalescing into short lines, as occurs in some of the Tydæas. The petals are green. It is one of the handsomest of the Hellebores.

Fig. 2. PUNCTATISSIMUS.—This belongs to the same group as the last, and approaches it in general character; but the flowers are not quite so finely shaped, nor the colour so deep and clear. The flowers are large, with broad, ovate, rather pointed sepals, which are of a pinkish or lilac-tinted purple, stained here and there with green on the inside. They are also, especially the outer ones, thickly spotted with darker purple spots, not quite so numerous or so regularly disposed as in P. R. Barr. The petals are green. It is a fine showy variety, from the same source as the last.

Fig. 3. RUBIDUS.—Like the last, a seedling of M. Leitchlin's, and a form of the orientalis group, very distinct in character, and desirable for general cultivation. The flowers are of medium size, the sepals ovate acute, moderately imbricated, expanded, of a reddish plum-colour, rather paler inside, and there spotted with purple in an irregular manner on some or all of the sepals. The petals are of a bright reddish-brown, in a single row, and afford the only instance known to us in which the petals are not more or less green.

Fig. 4. THOMAS S. WARE.—This is a fine variety of the orientalis group, raised by Mr. T. S. Ware, of Tottenham, and named after him. It has large expanded flowers, the sepals of which are broadly ovate, roundish at the top, nicely imbricated, not spotted, but deeply stained throughout of a purplish-rosy tint, more rosy than purple. It is a vigorous-growing, free-blooming variety, of very ornamental character.

Fig. 5. COMMERZIENRATH BENARY.—This is one of the seedlings raised and distributed by Mr. Heinemann, and is probably the best of the forms of the guttatus group. It is a very charming plant, of dwarfish habit, with green stems, and medium-sized, neatly-cupped flowers; the oblong ovate sepals are nicely imbricated, white, flushed with green in the outer sepals, prettily and freely spotted over the greater portion of the inner surface with dark crimson, the outermost sepal being less thickly spotted than the rest. It is a very pretty and desirable plant, having a general resemblance to guttatus, but very much superior to it in the purity of the ground-colour and the prominence of the spotting. The petals are green.

In the accompanying plate, Mr. Fitch has given as good a representation of the several varieties as the space at his command would permit. The thick, spotted stem is that of P. R. Barr, and even that represents but a small portion of the upper part of the flowering stem; with the exception of Fig. 5, which is dwarfer, the other kinds are equally vigorous, so that only a single bloom of each could be shown. It will be seen from these figures that it is very usual for the outermost sepal to be more flushed with green than those which occupy an inner position. It may also be well to explain to non-botanical readers that the showy-coloured parts in these flowers represent the calyx, and hence these parts are called sepals; while the petals are but little developed, and consist of the small tubular bodies, green in most cases, but red in Fig. 4, which form a ring at the exterior base of the stamens.—T. MOORE.

COFFEA LIBERICA.

CONSIDERABLE commercial interest attaches to the Liberian Coffee, *Coffea liberica*, a species introduced from Liberia, on the West Coast of Africa, and now attracting considerable attention in all the coffee-growing countries of the world. Mr. Bull, who was one of the original importers, remarks, in his New Plant *Catalogue*, that it is a plant of the highest commercial importance, and in all probability the most valuable economic introduction of the present century. It is of robust and vigorous growth, with very large coriaceous leaves, which in form are elliptic-oblong and shortly acuminate at the point. The flowers are produced in axillary clusters in great profusion. The berries of this coffee are much larger than those of *C. arabica*, and the plant much more productive, added to which it produces large crops at a low elevation, where *C. arabica* could not be successfully cultivated.

The plant, as above noted, is much stouter and more vigorous than the common Coffee, having leaves fully twice the size, the flowers and berries bearing a similar proportion to those of the better-known species. It thus forms a noble specimen of striking character in a mixed collection, and apart from the interest attaching to it as a valuable commercial product, is well worth a place in a mixed collection of stove plants. The annexed figure shows the plant very much reduced.—T. M.

THE CULTURE OF WALL FRUITS.

Chapter XXIII.—THE CHERRY.

THE culture of the Cherry as a wall fruit cannot be dispensed with in this uncertain climate. Pyramids and Standards in the open air may be, and ought to be, utilised to the greatest extent for culinary and market purposes, for which they are principally adapted; but when we come to the more choice productions required by a cultivated and refined taste for dessert purposes, we must either have recourse to their culture under an extended system of glass, arranged especially for their requirements, which is very expensive; or we must resort to wall culture, from which by far the best results are to be obtained. Any kind of cherry will produce much finer fruit when cultivated on a wall than without this aid; but there are some of the superior varieties of the Bigarreau section, such as Napoléon, Monstrueux de Mezel, and several others, besides the Old Bigarreau, for which a wall may be said to be indispensable in order to obtain the finest fruits for dessert. For this reason I make no apology for including this favourite fruit among those whose culture on walls I am discussing.

Morellos.—The growth of cherry-trees is various in character, and their little peculiarities must be studied in their management. That fine old cherry the Morello, for example, so admirably adapted for growing on northern aspects, produces long slender shoots, which form fruit-buds the same season, and from which the finest fruits are obtained the first year. The treatment, therefore, during the growing season, should be confined to the training-in of as

much young wood as will keep the trees well furnished, the remainder to be entirely removed, or occasionally a spur or so may be left in open spaces; but it is not necessary to resort to spurring at all, as they will produce as much fruit on the young wood as the trees ought to carry, if it is to be fine; indeed, spurs only crowd up the branches with unnecessary bloom and foliage. Very much of this can be regulated at the summer pruning, when it will be proper to remove every shoot not required for bearing purposes. At the winter pruning, it will only be necessary to remove, as far as possible, all shoots which have borne their fruit, and to train in the young ones. The Kentish varieties, which partake somewhat of the manner of growth of the Morello, are not worth a wall, and should be planted as standards, and after many years may become profitable, their fruit being valuable for tarts when fresh, and later on being much appreciated in a dried or preserved state.

Dukes.—The varieties of the Duke section, although growing to great perfection and abundance on standards, are very much improved by wall culture. They are not so free-growing as the Morello, but are very amenable to spur treatment, and the shoots continue to produce bearing buds for some years, so that the operator has little difficulty in keeping his trees well furnished by training in, at the growing season, as many young shoots as will keep up the supply of the bearing wood, and cutting off the remainder to form spurs, leaving little to be done at the winter pruning, except removing old and exhausted shoots, and training out younger wood to supply their places.

Bigarreaus.—As regards this section, the finest dessert fruit can only be obtained from wall trees, and as these produce their fruit both upon spurs and the *two-years old* shoots, the management must be conducted accordingly. The varieties of this section, in favourable soils and localities, have, as a rule, a tendency to throw up a very strong and luxuriant growth, very far removed from being a fruitful one; and the question of its being reduced to a fruitful state is merely one of time, or restriction of growth. Those who object to the latter, must be prepared with plenty of space, and continue to nail-in the young growth until the exuberance becomes exhausted and the trees commence bearing, after which the knife may be used more freely in order to regulate the supply of wood and fruit. Those to whom time is an object, and who have not such large spaces of wall at disposal, must resort to the system of restrictive treatment, which will be found to yield good results in less space and time than is requisite under the extension system.

In the selection of trees of this section for planting, it is best to secure such as have been only once headed back closely from the maiden state; they will have made generally at least six radiating shoots, which are mostly very strong. The trees should be planted in October, and mulched on the surface for the winter; and they may be thrown into bearing almost at once, by leaving the whole of the wood at full length without topping; but this is not quite desirable, as there should be a little more strength stored up in the trees, before they are subjected to those restrictive processes which will be necessary to induce early fruitfulness. It will be best, therefore, to shorten the whole of the shoots the first year to nine inches or a foot, according to their strength; this will enable the operator to obtain a tree well filled up from the centre. If the trees in the first year have made only a moderate growth, the shoots may safely be left at their full length, and most probably the fruit-bearing process will commence at once; but, if they have grown very strong indeed, as is often the case, let them be carefully lifted out of their place and replanted, without any shortening at the pruning season afterwards. This will, in most cases, be found to be quite sufficient restrictive action to induce a fruitful condition of growth, after which the fruit-bearing process should be sufficiently exhaustive to regulate growth.

I may remark, in passing, that the horizontal mode of training is very well adapted for either the Duke or Bigarreau section. Such trees may be kept in a good fruitful bearing state for many years, within a comparatively small space, by severely following up the spur system of pruning.

There is no tree under cultivation more susceptible of the advantages to be derived from a supply of virgin soil to draw upon, than the Cherry, and in the case of wall trees it produces very striking effects. Let the surface-soil of old exhausted fruit-tree borders be removed, say, for a depth of nine inches at least, and its place supplied by virgin compost, and it will be found that the trees have, as it were,

taken a new lease of life, and become young and vigorous, furnished with young heads on old shoulders, thus reversing the old maxim, with a confidence added which that does not possess. —JOHN COX, *Redleaf*.

DOUBLE STOCKS.

M. CHATÉ has treated at some length on this interesting subject, in the *Report of the International Congress of Botany and Horticulture*, held in Paris during 1878, from which we select the following passages, which bear more or less on the causes which result in the production of double flowers in the Stock, under the French and German modes of treatment, respectively :—

The Germans, M. Chaté observes, who have had the monopoly of the production of Stock seeds, cultivate the plants in pots placed on shelves near the glass in well ventilated greenhouses; they give them only enough water to keep them alive, and prevent the growth of any branches after the first. The result of this mode of culture, according to my experience, is that the plant bears few seed-pods; they are small, and contain but few seeds. The seeds ripen equally, but this method has the inconvenience of being expensive and unnatural, although it produces good results.

According to the French method, the seedlings, after being wintered in pots in cool, well-aired frames, are planted in the open ground in a dry soil during the latter half of March, weather permitting, at the foot of a wall exposed to the morning sun. At the blooming period, the flower spikes are pinched off so as to leave only ten or twelve seed-pods on the central, and four or five on the lateral racemes, all the other branches being carefully cut away. There is no fear of the growth of further branches, if they are kept dry during the development of the seeds. The seeds of the perpetual Stock, which is cultivated in Paris under the name Parisian, render by this mode of culture 60 to 70 per cent. of plants with double flowers. At the time of taking the seeds from the pods, this first result may be exceeded by cutting off the upper fourth of the spike, by which proceeding the proportion of double-flowered plants is increased to from 80 to 85 per cent.

I advise persons wishing to cultivate these plants to leave, at the time of pricking-out, all the smallest plants; the plants with double flowers have much longer leaves than those with simple flowers, and as it is easy to preserve those which have the longest leaves, a large proportion of plants with simple flowers will thus be left.

As to the influence of old seeds on doubling, M. Chaté has noticed that the plants springing from two and three-year-old seeds are the dwarfest; the leaves are fewer in number, larger and thicker, and the bloom later; the spikes, thicker and shorter, are made up of flowers of such fullness that they are close and compact, and have the appearance of being more double. The colours are brighter and clearer than those of the plants springing from the seeds of the same year.

To sum up the different points in the culture of Stocks, it appears that the maturity of the seeds, the concentration of the sap in a certain number of seed-pods, and the judicious choice of plants as seed-bearers, are the most important means of obtaining double varieties in this genus.

M. Chaté, on a subsequent occasion, showed plants of the Parisian Stocks, some with double and some with single flowers, and made the following remarks concerning them :—

The characteristics of the single ones are darker green leaves, longer and smoother, the centre is well open and cup-shaped, the habit dwarfer, and the leaves very thickly set. Those with double flowers, on the contrary, have long, downy leaves; the small ones in the centre are twisted or rolled up, and covered with whitish hairs. These are very distinct characteristics, for those whose business it is to rogue the Stocks.

In the two specimens of Parisian Stocks with their seed-pods, the first has been pinched in the way I have mentioned, the other has been left to Nature. In the first, which has been pinched, there are about 250 or 300 seeds, which will produce 70 to 75 per cent. of Stocks with double flowers; in the second, we may reckon that there are from 1,200 to 1,500 seeds, which will give 75 to 80 per cent. of Stocks with single flowers. Thus we see the advantage of the French plan.

From the use of these different methods, we may conclude that the duplication is the direct result of excessive health, since the more the sap has been concentrated on a small number of seed-pods and seeds, the more double flowers are obtained.

ADIE'S LAWN EDGE-CLIPPER.

THOSE who have any experience in the management of lawns will not need to be told how immeasurably great is the advantage secured by the modern mowing machine over the old plan of scythe-mowing, as regards the facility afforded for keeping the grass closely cut. The machine is rapid in its action, even and efficient in its execution, and easy in its working, so that its use leads to economy both of time and energy. The rapidity and ease with which the lawn mower does its work, as contrasted with the slow operation of clipping the edges by hand in the ordinary way, some time ago suggested to Mr. Patrick Adie, of Pall Mall, the idea of actuating the common edging shears by simple machinery, so as greatly to increase the rapidity with which the implement could be worked; and the result, as perfected by sundry modifications and the experience gained by successive trials, is represented in the implement we now figure.

To effect the object in view, Mr. Adie has taken away the handle usually affixed to the top or movable blade, and has substituted a tooth and arm to which to attach one end of a spring, and has also added a cylindrical roller, 4 in. wide and 5 in. in diameter, having an

axle working in a journal attached to the tang of the lower or fixed blade. There is a shaft or handle about 4 ft. long. The roller, it will be seen, runs on the turf to be edged, just behind the cutting blades. By means of a cam furnished with three arms (or in some machines, intended for quicker action, with four arms), and attached to the other end of the axle, the top blade of the shears is lifted when the cam presses on a tooth attached to its tang end; this, as it revolves, raises or opens the blade, when it is immediately shut again with a slam by means of a spring, and in shutting cuts the grass overhanging its edges, and thus clears the way for the forward movement, preparatory to the next cut. The machine makes a cut of 6 in., then rolls on 5 in. more, and thus, being assisted by the rapid action of the spring, keeps a clear course for itself before the next cut, independently of the rate of motion. The rate of cutting is regulated by the rate of propulsion; practically, any speed up to a quick walking pace may be maintained, if everything is in fair trim. In use, the machine requires to be held firmly, and guided with discretion; there should be a gentle pressure downwards, the back of the lower blade being kept close to the edge of the turf, but not allowed to rest on the ground or walk, its point being held a trifle below the top of the edge. There are different springs provided, to be used as the grass may be coarser or finer.

On well-kept edgings, this new machine does its work rapidly and admirably, the grass being cut with precision, and the line maintained intact, while the work is done much more rapidly than by the ordinary shears. To adapt it for cutting more irregular margins, where the sand has choked up the grass, or where the grass itself has spread out and rooted in the ground or gravel, the front of the lower blade has now been made chisel-pointed, by which it effectually cuts its way. In the case of the mowing machine, the work is so much facilitated by its rapid action, that one can afford to run over it frequently, while the work is light, and then nothing can be more satisfactory; but if neglected, so that the crop to be cut is such as to choke the machine, good work is impossible. So it will be with this new machine, the use of which will, we have no doubt, become general, and it will do much towards preventing turf edgings from getting into the irregular clogged-up condition in which we too often find them.—T. Moore.

CYPRIPEDIUM BARBATUM WARNERIANUM.

THIS very handsome Lady's Slipper is figured with remarkable fidelity in the part just issued (ser. 3, part 4) of Warner's *Select Orchidaceous Plants*, a work which is devoted to the publication of admirable folio portraits of the best and most distinct of the cultivated Orchids, and which all who take interest in these high-class plants, would gladly welcome if issued at more frequent and determinate intervals. It is in every other respect deserving of the highest encomiums. As an example of the text, the cultural part of which is furnished by Mr. B. S. Williams, we print, in a condensed form, the account given of the fine variety of Cypripedium barbatum dedicated to Mr. Warner:—

Cypripedium barbatum, which was distinguished by Dr. Lindley from the allied *C. venustum* and *C. purpuratum*, by the prominent bearded warts which are situated along the upper edge of the spreading wing-like petals, came from the Straits of Malacca. The variety, which has been called *War-*

nerianum, is one of the most beautiful and distinct forms yet known. The plant has flowered for many years in succession in the Broomfield collection, and was exhibited at the grand International show at St. Petersburg in 1869, when it was very much admired; it then bore about fifty of its richly-coloured blossoms, and travelled from London to St. Petersburg and back without sustaining the least injury. This fact that it is capable of bearing long journeys, and of its lasting a long time in beauty, makes it equally valuable for exhibition and also for home decorative purposes. No other *Cypripedium* blooms so freely or in so small a state. The leaves are very prettily tesselated, oblong acute, and from 3 in. to 4 in. in length. The flowers are elevated on a stalk about 10 in. in height, two blossoms being sometimes produced on the same scape; the dorsal sepal is broad and very handsomely marked, the upper part being of a clear and brilliant white, and the lower part of a rich purplish-crimson; the other parts of the flower are of a purplish-brown colour of various shades. The flowers are produced during the spring months, and continue from six to eight weeks in perfection.

The tropical species of *Cypripedium* are, for the most part, dwarf and compact in growth, and evergreen in habit, so that they are always interesting objects to the cultivator, whether in or out of bloom. The variety now under notice requires the same treatment as the other forms of *C. barbatum*. These thrive best in pots, well drained with broken crocks, or crocks mixed with charcoal, and should be potted in good, rough, fibrous peat, with a little sand. The base of the plant should be placed well above the pot, two inches above the rim would not be too high, as they are generally free-rooting plants, spreading their roots about the surface of the peat. They require a liberal supply of water at the roots during their growing season; moreover, they require but little rest, and while resting should not be allowed to get dry, since they have no thick fleshy pseudo-bulbs from which to draw sustenance. They will thrive either in the Cattleya or East India House, and are therefore very accommodating. We have seen them doing well in a house along with mixed stove plants, where there has not been a house set apart for Orchids. Being compact and dwarf, they occupy but little space, while the number of blossoms they produce is very considerable, in consequence of which they are a real acquisition to those who are fond of flowers. Indeed, the *Cypripediums* should be much more generally grown, as, by securing various kinds, a succession of blossoms may be arranged. The flowers are especially useful when cut, as they will last for six weeks in water, if attention be given them. They are also among the best of Orchids for exhibition purposes, as they may be used twenty times over, if not bruised by packing.

The insects that attack these plants are the thrips and the scale, which may be kept under by careful hand-washing. The plants are propagated by dividing the growths after they are matured, or just as they are starting afresh, which takes place soon after the blooming season is over; the divisions should be placed in small pots, using the same material at the roots as that recommended for the established specimens.—B. S. Williams.

Whether for its pictorial illustrations or its cultural instructions, we can heartily recommend Mr. Warner's *Select Orchidaceous Plants* as a book which will be appreciated on the table of either the drawing-room or the garden library. The variety of *C. barbatum*, to which the above remarks refer, differs in the more distinct tesselation of its variegated leaves, in the larger flowers, and in the brighter vinous crimson tints which pervade the flowers, especially remarkable on the dorsal sepal.—T. M.

VIOLETS.

With the return of bright sunshine, those universal favourites, the Violets, are now in full beauty. The past weather has been anything but favourable, as those in frames required so much covering-up that their progress was but slow; and when the blossoms formed, they could not expand, owing to the weather being so dull and cold; while those planted in borders outside suffered severely, and will consequently flower late.

As soon as they have done flowering (during April), will be the time to lay the foundation for next season. The old plants should be taken up and divided into single crowns, with some of the old roots attached. Plant them 1 ft. apart each way, on a north border of rich soil, not too light, as the Violet succeeds best in a moist situation, where it is protected from the glare of the summer sun. They should be well watered in dry weather—in fact, a slight watering every evening will be beneficial, as they too often fall a prey to red-spider, especially so the Neapolitan. All runners should be cut off, the plants kept clear of weeds, and the surface of the soil loosened.

In September prepare a frame; one that has been used for cucumbers or melons will do very well. If the soil is dry, give a good soaking of water, and put in some good soil, a mixture of loam and dung, so as to bring the plants near the glass. Do not put the plants in too thickly, as during winter damp is their greatest enemy. In favourable weather, the lights are best off altogether, and should be tilted back and front at all times, when not freezing; protect them well in severe weather, but let them have all the daylight possible. If any are desired in pots, a frame may be cleared about February, and the plants potted up in 6-in. (32) or 5-in. (48) pots, according to size, and introduced into a gentle heat. They must be kept near the glass, or they will become drawn and pale in colour; and all decaying leaves must be picked off. When in flower, they make nice subjects for indoor decoration. I find they do much better

wintered in frames, than if potted up early in the season.

My remarks refer to the Neapolitan, but the Victoria Regina and the Czar are well worth treating in the manner I have endeavoured to describe.—GEORGE POTTS, Jun., *Epsom.*

MORICANDIA SONCHIFOLIA.

THIS showy hardy annual, which is a native of Northern China, was discovered and described nearly fifty years ago by the traveller Bunge, but has only recently found its way into our gardens. It is of erect habit, with leafy stems, and racemes of pale

violet or mauve coloured flowers, as large as those of a single Wallflower. Being quite hardy, and of the easiest cultivation, it will probably establish itself as a favourite border annual.

The plant grows from one to two feet in height, and is of slender branching habit. The lower or root-leaves, which soon die away, are lyrately-pinnatifid, with a cordate terminal lobe; while the stem leaves are obovate-oblong or panduriform, all of them sessile and acutely auricled at the base. The flowers grow in rather open terminal racemes, several inches in length, and are each upwards of an inch across, consisting of four roundish-ovate clawed petals, of a bright and delicate tint of bluish-violet; these flowers are produced in succession, owing to the branching habit of the plant. It is rather a desirable addition to the annuals of the cruciferous order, being showy and distinct in colour; and may be sown with other hardy annuals at once in the open border about March or April.—T. M.

HOW TO FLOWER VANDA TERES.

IT is well known that *Vanda teres* has cylindrical articulated stems, furnished at each node with a cylindrical leaf, and with a close sheath which envelops each internode. The floral scapes and the branches both start from the node immediately below the leaf, the latter in July or August, and the former in March or April. When either of these two growths is about to start, the leaf-sheath splits longitudinally, to make way for it.

If a stem of this *Vanda* is cut through, it will be seen that at every node, without exception, there exists, at the place just pointed out, a latent eye, which starts from its lethargy when any cause provokes its awakening. To bring about this, it is only necessary to split, with the point of a penknife, the sheath of the leaf, just above the eye that one wishes to start, as it would itself do, if left to set itself in action. This delicate operation, however, requires dexterity, because, if the instrument penetrates too deeply, it may wound the eye, and thus cause it to miscarry; and if the sheath is not completely pierced through, the operation is without result. Already, I had said (*Orchid.*, p. 509):—"A remarkable fact, of which I had suspicion, and which two years' experience has confirmed, is, that the growth of this plant resembles that of fruit-trees. In these, the eye which has just shot forth can, according to the quantity of sap made to flow towards it, become a flower-bud or a wood-bud. In the *Vanda*, if, when the scapes begin to break through in spring, the plant is submitted to a degree of atmospheric humidity sufficient to cause its tissues to swell, they become converted into

leaf-branches. This result is produced by moistening the stem throughout its length, and for several consecutive days, even though the scapes have developed sufficiently to admit of no doubt as to their floriferous constitution; while the scapes of the unmoistened branches, not changing their nature, are at once arrested in their growth, and remain in the latent state, undergoing their metamorphosis until the end of July, when the plant, in all its activity, normally produces its branches of bifurcation."

If, then, the little surgical operation above indicated is performed at the moment when the scapes begin to split the sheaths which cover them, the eyes thus treated will shoot forth and produce flowers; while if it be executed in July, it will cause a growth of auxiliary stems. The success of the operation is not long in making itself known; a few days after it is performed, the little split opens, and the eye is perceived at the bottom of the wound.—COMTE F. DU BUYSSON, in *Flore des Serres*, xxiii. 88.

THE FUCHSIA.

THE Fuchsia, from its elegant free habit and profusion of bloom, has become one of the most popular greenhouse flowers of the day; and in regard to the extent of its popularity, may be said almost to rank next to the Rose. During the last twenty years, it has been very much improved by the florist, who, by patient fertilisation and careful seeding, has produced flowers of enormous size, great substance and beauty, and of many hues of colour. The improvement of the double varieties has kept pace with that of the single ones, and though the single flowers are the most elegant in appearance and shape, the double-flowering forms are much sought after, because of their great size and striking character.

Propagation is effected by seeds and cuttings, the latter method being the one generally adopted, as seeding is only resorted to in order to obtain new varieties. Cuttings can be taken at almost any season of the year, as they strike with great readiness, and simply require to be placed in shallow pans in a light and very sandy soil, in a brisk heat, and in a few days the young cuttings will be freely rooted, when they can be potted off singly into small 60-pots, and grown on as required.

In attempting to raise the Fuchsia from seed, it should always be taken from carefully impregnated flowers, or the result will not repay the labour and care expended in the process. It is only carefully impregnated flowers that will produce finely developed seedlings. The seed should be sown in pans about the month of January, in any light soil, covering them about a quarter of an inch with finely sifted leaf-mould, or rotted turf, mixed with silver-sand, gently drawing the syringe over them, after plunging the pans in a bed in a propagating house heated on the tank system. Those who have not the advantage of a propagating house should delay the sowing a few weeks, and plunge the pans in a dung-heated frame; but great care is requisite in forming the dung-beds, for if the seeds are sown before the bed is properly ready for them, the seeds will come up quickly, and the plants damp off quite as fast. For three weeks or a month, under the most favourable circumstances, all that the grower can do will be to keep the surface of the seed-pan just moist, and not wet. When the plants have made another pair of leaves above the seed-leaves, prick off the strongest into 60-sized pots. This is considered to be the time when seedling Fuchsias least feel any check from removal. The pots should be plunged to keep the roots moist, and it dispenses with the necessity for using much water overhead, from the excess of which the plants frequently damp off at the surface of the pots. Heat, moisture, and shade are all essential at this stage of growth, and on no account should the plants receive a check, for their early flowering entirely depends upon the treatment received at this early stage. As the plants grow, they should be shifted as required, tied neatly to stakes, and flowered in 48 or 36-pots, selecting only those for propagation that show evidence of novelty and undoubted quality..

Those cultivators of the Fuchsia who like to possess finely-grown symmetrical plants invariably select cuttings struck in August or September. These can either have been kept through the winter in store-pits, or potted off in October singly into 60-pots, and kept moving through the winter. Any flowering buds should be picked off from the plants as they show themselves, and the plants must be kept in the warm part of a green-

Plum Rivers' Grand Duke.

W.H. Fitch del

P. De Pannemaeker Chromolith. (Gand,

house, and not allowed to suffer for want of water. Early in February, or later, according to circumstances, the plants are shifted into pots a size larger, and pushed on into growth in a moderate heat, where they have ample room to grow without becoming drawn, and where they can be frequently syringed in bright, sunny weather. A stake is placed to each plant, and by means of judicious pinching, the foundation of a good symmetrical growth and shape is secured. The side-shoots are all pinched back to about four leaves, and if it is the wish of the cultivator to develope plants profuse in growth and well furnished at the base, the leading main shoot should also be stopped, and the shoot produced next this should be encouraged to grow on as a leader; as this throws out side-shoots, the process of pinching should be again resorted to. When the pots are well filled with roots, a final shift should be given into others 10 in. or 12 in. in diameter, and in these the plants should be flowered. It is the custom of growers to place the ball of the plant low down in the pot, and press the soil firmly about it. The plants should be placed in a shady position till fairly established, and then transferred to a sunny sheltered one, and be plunged in a bed of cinder-ashes up to the rims of the pots, so that the sun cannot shine directly on the pots. The plants should be plunged sufficiently far apart to enable the cultivator to get between them, and the working of stopping-back and pinching-in must be done with discretion, according to the freedom of growth and habit of the plant. If the plants are intended for exhibition, the stopping must cease some five weeks before the plants are wanted for show purposes. When the pots have become filled with roots. Some liquid manure can be given with great advantage twice or thrice a week, and plentiful syringings given of an evening after hot days. About a fortnight previous to the exhibition taking place, the plants should be removed to a north house, or a sheltered position with this aspect, to mature the flowers.

It will be seen from the foregoing that this mode of growing the Fuchsia is capable of being put into practice by almost any one having a glass structure in which to keep the young plants during the winter. Those having glass at their disposal in which to grow the plants through the summer, could accomplish the same results with cuttings struck in February or March, because the plants could be grown on much more rapidly. It also obviates the necessity of keeping the plants through a second winter, as old plants never make the fine young healthy vigorous specimens, laden with bloom, that can be developed in the manner just set forth.—R. Dean, *Ealing*.

RIVERS' GRAND DUKE PLUM.

[Plate 536.]

We are indebted to W. Stride, Esq., of Redbridge, Southampton, an ardent fruit cultivator, for the examples of this fine late Plum which we here represent. They were sent on October 29th, and Mr. Stride writes:—"These are gathered to-day, and a part of the crop still remains on the tree. Every person whose opinion I have asked gives the plum a high character."

The variety, which forms a welcome addition to our latest Plums, was raised by Mr. Rivers, of Sawbridgeworth. It is a seedling from Autumn Compôte, and has already proved itself to be a valuable acquisition in its class, for besides being decidedly late, it is also of excellent quality. The following is Dr. Hogg's description, taken from the *Year-Book* for 1880, wherein it is noted as a novelty:—

"The fruit is oval, with a short neck and a well-defined suture, which is deep at the stalk, and frequently so at the apex, where it is sometimes higher on one side than the other. Skin dark, almost a blackish purple, but reddish where shaded, and covered with blue bloom. Stalk one to one and a quarter inch long, very slender, and inserted in a round, narrow cavity. Flesh greenish-yellow, adhering closely to the stone, very brisk, with a sweet and rich flavour when fully ripe. Stone with a very shallow and narrow channel, like a thread. Leaves large and glossy. Young shoots smooth.

"The tree is the best grower of all the Plums. This feature is strikingly displayed in Mr. Bunyard's Nursery, at Maidstone, where all the best varieties are cultivated and excellently grown, but the rows of Grand Duke are the finest of all. In the Sawbridgeworth Nursery are many handsome pyramids in a bearing state. For this form of culture it is clearly well adapted. It will make a fine wall plum, and of a wall it is worthy, and will form excellent espaliers. Grand Duke is likely to prove a plum of real usefulness, and in all probability it will be largely grown."

The accompanying figure will show that the variety is as handsome in appearance as it is useful in character.—T. Moore.

THE SNOW PLANT.

ONE of the most remarkable members of the vegetable world is the Snow Plant of the Californian Sierras, the *Sarcodes sanguinea* of Torrey, which belongs to the natural order Monotropeæ. It is leafless and fleshy, but clothed below with scales, and bearing in the upper portion a dense spike-like raceme of five-lobed campanulate flowers. A coloured figure of it is given in the January number of *Vick's Illustrated Monthly Magazine*, accompanied by the following article and woodcut, for the use of which latter we are indebted to Mr. Vick:—

"A very curious and beautiful object is the Snow Plant of the Sierras. It stands alone, for there is but one species, and we are not aware of any known varieties. It loves the mountains, and we believe is never found at a less elevation than four thousand feet above the sea, where it drinks the cool water from the melting snow. We first saw this interesting plant one very fine morning in the neighbourhood of the Calaveras Grove of Big Trees, and hastily left the carriage, which was winding its way slowly up the mountain, to capture what was to us a treasure indeed. Snow still lingered in the shady places and dells, and among these were several fine plants, one of which we gathered. It was icy cold, and as it became warm, the beautiful red assumed a darker hue, until finally it became purple.

The Snow Plant, Sarcodes sanguinea, is a parasite that grows on the roots of trees, usually those of Pine, and from three to five inches below the surface of the ground. The whole plant is succulent, and all above the soil, leaf, stem and flower, is of a crimson or blood-red colour, while the portion not exposed to the light, as shown by the ground-line of the little engraving, is of a pale pink. The usual height of the plant is from ten to fifteen inches, but we have heard of much larger specimens.

Any attempt to preserve a plant in anything like a natural condition we were satisfied would be a failure, and as the next best thing determined to secure a good painting, if possible; and in this were fortunate, for finding an artist sketching in the mountains, we secured his services, and a fine oil painting of this elegant mountain plant, of which we have never seen even a wood-cut representation, except the little one we publish with this, and no coloured plate has before been given to the world that we can learn. We have taken great pains to have a correct likeness made, and with tolerable success. Our page was not large enough to show a medium-sized plant, but specimens are not uncommon of the size of our coloured plate. Some attempts have been made to carry the Snow Plant east in ice and snow, but with not very marked success. A few years since, a gentleman of San Francisco grew plants from seed."

ROSES ON THEIR OWN ROOTS.

WE are being forced back to this by a combination of causes. Rosarians are hardly any longer free agents in this matter, and the irresistible logic of facts is likely to prove far more potent than the slower and less certain logic of reason. Circumstances so widely apart as improved agriculture and the abnormal severities of our winters, combine to discourage the cultivation of Standard Roses. The first is daily assailing, and will finally destroy our supply of hedge-row briers; the second slaughters them by the thousand, in their budding quarters and afterwards.

We have heard a good deal about zones of cold, but bringing these to the test of experience as illustrated by the doings of the frost among our Standard Roses, during the last two years, the most intense cold is the zone of our Standard Roses ranging from $2\frac{1}{2}$ feet to 4 feet from the surface of the ground. It is certain that above and below these lines plants seem safer than on them. Pillar Roses, for example, or Roses up trees, are found to be safe, as well as Roses on the ground-level, while standards of the orthodox heights are crippled and slain in all directions. The lesson is obvious—abolish standards, and dwarf or raise them into giants, if we would save our Roses. Why, indeed, grow them at all? They are fashionable and convenient, no doubt; but how many fashions have been and are not, and convenience is often a matter more of custom than necessity! The purchasing of so many briers, or sending a man to crowbar them out of hedge-rows, has been a convenient and cheap way of procuring Roses. But the rooting of Rose-cuttings, and the grafting of Roses on roots or dwarf stocks, is just as simple, easy, and convenient, when one learns how to manage them.

In some places and situations—this, among others—Rosarians must either form standards or wire their Roses in; otherwise the rabbits would peel or destroy the dwarfs. But these prolific vermin are not the masters of the Rosaries of England, and need not, as a rule, determine the choice of Rose-growers. Another argument that I have used in favour of Standard Roses is that they lift the Rose up to our level, instead of our having to bend low to admire their beauty or inhale their fragrance. To say nothing of the gallant sentiment of stooping to conquer, this argument loses much of its force in these days of high culture, when such Roses as Charles Lefebvre, Gloire de Dijon, and many more, can be made to give shoots two or even three yards long in a single season. Roses that are wanted to stand high can yield their own elevators, without help from the brier. As to weaker growers, he who is too proud to bend low to admire their beauty or inhale their fragrance, can hardly be said to be worthy of them.

Further, the Roses can make roots enough, and to spare, for themselves, without being dependent on the wild brier, so that the borrowing of roots from the wilder members of the family is by no means necessary. No doubt, they will always be used to some extent. But the safety of our Roses seems to demand that Rosarians should no longer lean so heavily on the brier.

Roses on their roots can readily be made frost-proof. Virtually, their roots are so, as soon as buried in the ground. It is seldom, indeed, that we have frosts severe enough to kill Rose-roots. The frosts kill the tops and the stalks, while, unfortunately, the roots, left alone, are only those of the brier. But with Roses on their own roots, each root may be said to be a Rose-tree in embryo. Should the top be destroyed, these embryo Roses develop into suckers, that often rival in strength the top cut down by frost. And besides, it is not needful to stand helplessly by and see dwarf roses cut to the ground. Should no snow fall and protect them, our mulchings can take the place of snow. These last may be heavy or the reverse, according to the amount of Rose-tops that it is wished to save. A thin litter of strawy dung or other substances suffices to preserve alive all dwarf Roses to the height it extends, and, anyhow, dwarfs are sure to spring up afresh from the root-stock as soon as the winter is over and gone; and then we have, at the worst, hopeful, promising young plants, instead of mere wrecks, as is the case with Standard Roses.

Not only this, the frost often proves a friend to the dwarf Roses. It cuts down worn-out heads that the Rosarian may not have had the courage to remove. And from the base of the Rose, there leaps up, as if by magic, but really through the concentration of vital force, such splendid shoots as to produce prize flowers the same season.—D. T. Fish, *Hardwicke.*

ECHINACEA INTERMEDIA.

We are indebted to Mr. T. S. Ware, of Tottenham, for the opportunity of introducing the accompanying figure of *Echinacea intermedia*, a hardy herbaceous perennial of bold habit, which, as will be seen by the illustration, is also one of a showy and ornamental character. It belongs to the great family of the Composites, and is an offshoot from the genus *Rudbeckia*. There is a coloured figure of it published in *Paxton's Magazine of Botany*, xv., 79.

The plant is perfectly hardy, and one of the finest of autumnal border flowers, producing its blossoms from the end of July onwards. Being a free-blooming plant and very handsome, it is deserving a place in every border of hardy flowers; it is suitable for a back-row plant, or for placing in the front part of the shrubbery. It grows about 4 ft. high, and has robust hairy stems, and dark green scabrous leaves, which are

of an ovate outline, and somewhat heart-shaped at the base. The flower branches are furnished with leaves, which become smaller and more pointed in the upper parts. Each branch is terminated by a large showy flower-head 4 in. to 5 in. across, with the florets of the disk black, crowded, and forming a convex mass, and those of the ray ligulate, spreading, and of a reddish-purple colour. It is of the easiest management, and will grow in any good garden soil, flowering in succession for some weeks during the early autumn months. Like other herbaceous perennials, it is increased by dividing the roots. It is a garden hybrid, obtained between *Echinacea* (*Rudbeckia*) *purpurea* and *E. angustifolia*, and appears to have been raised so long since as 1826.—T. Moore.

HARDINESS OF PRIMULA SIEBOLDII.

I AM somewhat puzzled to account for the loss of a large number of plants of the finest new varieties of this beautiful and useful Primula. The roots were divided in the autumn, and the rhizomes potted singly into medium-sized "long toms," and then placed in a cold house, previous to the frost. A large number appear to have been killed outright by the frost, as, when examined, the rhizomes were completely rotten and quite putrid. The new white varieties suffered most, and I fear the stock of one or two of them is hopelessly lost. The deeper coloured varieties are scarcely hurt, and one would suppose that they are hardier than the more delicately-tinted forms. A lot of seedlings in the open ground, on a cold north border, with only the protection of the snow, is quite unharmed, and growing merrily, and with great luxuriance. Gardeners are sometimes brought face to face with facts that go to upset their previous calculations, and cause them to question the groundwork of their knowledge. The death of so many of my new varieties of *P. Sieboldii* is a case in point.—R. Dean, *Ealing*.

RUSSIAN APPLES.

THE following varieties of Apples of Russian origin were described some short time since in the *Revue Horticole*, and may perhaps, some of them, be useful for the purpose of hybridizing, if not otherwise desirable as early sorts.

Bergamottnoje.—This varicty is below medium size, subspherical or inequilateral in form, about 2 in. in diameter; with a thin stalk, scarcely exceeding the small, deep cavity; eye very open, with the divisions spreading; skin marked almost all over with a dim or vinous red colour, arranged in stripes; flesh greenish white, rather close, sugary and agreeable. Ripe in the first fortnight in August.

Borkowskoje.—Fruit medium-sized, flattened vertically, about $2\frac{1}{4}$ in. in diameter; stalk very short and slender, in a rather broad and deep cavity; eye open in a broadly widened hollow, with rather broad divisions; skin yellowish green, here and there spotted with reddish grey; flesh white, rather sugary, decaying somewhat quickly. Ripe in the beginning of August.

Borowinka.—Fruit medium-sized, depressed, often inequilateral; stalk long (nearly $\frac{4}{5}$ in.), in a broad shallow cavity; eye broadly open in a well-marked depression, with short or erose, almost void divisions; flesh tender, nearly white; juice sugary, acidulous, with an agreeable taste. Ripe in August.

Rinalkoski.—Fruit much depressed, recalling by its shape the Pomme d'Api, about 2 in in diameter, irregularly ribbed; with very rounded angles; stalk short, in a regular cavity, which it does not exceed; eye broadly open, with very short divisions; skin yellowish green, shining, often marked with grey stripes and with lively carroty red, becoming dark red on the parts strongly exposed to the sun; flesh very firm, greenish white, sugary, acidulous, of a very agreeable taste. Ripens first fortnight in August.

Royale.—There are several varieties of Apples which bear the qualification "royal;" but, by its characters, none of them can be related to that now under consideration. Fruit having the general appearance (colour and shape) of a Rambour, but not so large; stalk much exceeding the cavity; eye closed, in a ribbed depression, with short rather wide divisions, whitish grey, through the presence of an abundant tomentum; skin bright yellow, sprinkled with lively rose broad stripes; flesh white, sugary, agreeable. Ripe in the first fortnight in August.

WEEPING BIRCHES.

IN this group are found the most charming examples of ornamental trees. Graceful in outline, elegant and novel in their mode of growth, impressive and attractive in appearance, they possess all those characteristics of growth and foliage which render them especially desirable and valuable for the embellishment of landscapes, and the ornamentation of grounds.

The beautiful *Cut-leaved Weeping Birch*, sometimes called the Lady Birch, with its bright bark glistening in the summer's sun, and its graceful, drooping branches swaying in the lightest breeze, is a worthy subject for the artist's pencil and the poet's pen. In winter, too, covered with ice and illumined with the brilliant rays of the setting sun, its trembling branches apparently studded with innumerable brilliants, it presents a charming picture, attracting the attention and winning the admiration of even the most careless and indifferent observer. H. W. Sargent, Esq., writing to the *Horticulturist* from Germany in 1848, and describing Booth's nursery at Holstein, stated that "among trees and shrubs new to me, I noticed a Weeping Birch peculiar to Germany. It had descending shoots 32 ft. long. The branches hung as perpendicular downward as those of the Sophora pendula, or the common Weeping Willow, and are quite as pensile as the latter." The Cut-leaved Birch is one of those trees which is complete in itself. It has no defect in habit which requires to be concealed, and should always be planted by itself in the most prominent and conspicuous position on the lawn. Although it is a rapid grower, and attains to considerable size, it is equally well adapted for large and small grounds, and wherever planted always contributes towards rendering a landscape charming and effective. For avenue planting it surpasses all other trees. Were we limited to a single ornamental tree, we should have no hesitation in selecting this in preference to any other. It is the most graceful of all trees, and deserves to be better known and more widely disseminated.

Betula alba pendula Youngii (Young's Weeping Birch) is a new and interesting variety, which is admirably adapted for the lawn. It was discovered about twenty years ago by Mr. W. Young, of Milford. Owing to the slenderness of the branches, which in the original plant were so weak as to creep along the surface, great difficulty was experienced in propagating it. To the graceful elegance peculiar to the Birch family it adds the odd singular erratic habit of the Weeping Beech. It has long, slender, thread-like branchlets, which fall from the main branches like spray. Grafted upon stems 6 to 7 feet high, it can be grown into a rounded, regular head, like the Kilmarnock Willow, or, left to itself, it will send up a leading shoot, with side branches like the cut-leaved, only more spreading. In this distinct type we have graceefulness and picturesqueness combined. It is one of the very best of new trees, and worthy of being introduced into every garden. [See plate of this fine characteristic tree in our volume for 1873.]

Betula alba pendula elegans is another charming variety, of quite recent introduction, and, as yet, but little known. It originated with the Messrs. Bonamy Bros., at Toulouse, France, in the year 1866, and was first exhibited by them at the Paris Universal Exhibition in 1867, where it received a Gold Medal, the highest award for new trees. Its habit of growth is unique and beautiful. Grafted on stems 6 ft. to 8 ft. high, the branches grow directly downwards, parallel with the stem. Its decided pendulous habit, rich handsome foliage, delicate branches, render it particularly showy and attractive on the lawn. Among ornamental trees of recent introduction, this and Young's Weeping Birch may be considered the most valuable acquisitions of many years.—W. C. Barry, *Rochester, N. Y.*

SUBURBAN GARDENING.

APRIL.—As we write, the open, mild, drying March weather is all that can be desired, and gardeners are anticipating that it will last, and that the gardening operations, so long suspended by the rain, will be proceeded with. The traditional March dust can be gathered up in the streets, and there is a lull in the cold, harsh winds that make March proverbially unpleasant.

Kitchen Garden.—This is now the busiest department of the garden. The latest crops of *Longpod* and *Windsor Beans* and main crop *Peas* should be sown without delay. In the case of small gardens, space has to be considered, and it is economical to grow dwarf varieties of Peas, such as *Premier* and *Veitch's Perfection*. The *Early Horn Carrot*, dwarf

Ulm Savoy, *Brussels Sprouts*, also dwarf *Kale*, *Cauliflowers*, and *Cabbage* for autumn use, with *Lettuce*, *Onions*, *Radishes*, and *Mustard* and *Cress* for succession, should be sown without delay, supposing the soil to be in good working order. Some *Beet* should be sown as early as convenient in deeply-dug but not highly-manured ground, and all the *Celery* that will be required. The ground, generally being very moist after so much rain, should be kept well stirred on the surface, and where practicable, lightly forked over. It is said we are to experience heavy droughts this summer, and he will be best prepared for them who has his ground the lightest, most open, and deeply stirred. *Potatos*, not yet planted, should be got in without delay, and towards the end of the month *Scarlet Runners* and *French Beans* may be sown. As our notes are intended for small gardens, we confine our descriptions to these. Every opportunity for getting in seeds and plants while the weather is dry and open should be seized, as bad weather may set in, as is frequently the case in April.

Fruit Garden.—Those who make a point of protecting their fruit-trees on walls will need to be on the alert, as the blossom-buds are swelling rapidly, under the influence of the warm, sunny weather. In addition to guarding against frost, the trees should also be screened from cutting, east winds. The protection used, whether tiffany, mats, &c., should be so arranged as to be easily removed, and also admit of a free circulation of air between it and the trees. On no account should the trees be shut up close, as this is almost as injurious as the effect of frost. Mulching should be supplied to early-planted fruit-trees so soon as dry weather sets in, and water given at intervals. The hoe should be applied to *Strawberry-beds*, and when clear of leaves, a mulching of dung and leaves, or any such material, will be found of great service. There is a promise of a rich blossom on all kinds of fruit-trees; let us hope fate will be propitious, and that the killing frosts which happen between the 12th and 26th of May will be much less hurtful than on some previous occasions.

Flower Garden. — The spring-flowering plants are now getting very gay, though the winter has played great havoc with many of them. *Daisies*, *Forget-me-Nots*, *Primroses*, and a few others have come out of the ordeal well, and those that have spare plants can now make their beds somewhat complete. Flower-beds that have been lying empty all the winter will now require to be dug and dressed, and thrown up a little rough, for the weather to sweeten and pulverise the soil. A dressing of manure and leaves will be of great advantage on the mixed border, and it will save many things from injury from early frosts and cutting winds. In the case of *Turf* which has been recently laid down, a good soaking of water will be of service, and some old tan or leaf-mould thrown over it afterwards. Now is a good time to clip *Box-edging*, as the young growths will soon make it look fresh and green. All *Half-hardy Annuals* not yet sown should be placed in the soil without delay, and any coming up should be carefully looked after. With the first spell of fine weather in April, *Hardy Annuals* can be sown in the open ground, and any half-hardy annuals it may be advisable to raise in that way.

Cold Frames.—Those who grow *Auriculas*, *Polyanthuses*, *Primroses*, &c., in pots, will now be reaping the rich reward of their labour. The plants, having been top-dressed, will require plenty of water on sunny days, decaying leaves removed, and the surface-soil stirred. *Hepaticas*, *Triteleia*, many of the hardy *Primulas*, and such like plants, will now be getting very gay, and will require attention. Plenty of air must be given on all favourable occasions; and if green-fly puts in an appearance, a good fumigation should be given.

Greenhouse.—If all who have a cold greenhouse have shared our own fate, under the hard frosts of January and February, they are, indeed, to be commiserated. But *Auriculas*, *Primroses*, *Camellias*, *Dielytra*, *Forget-me-Nots*, and other things are now flowering, and with *Hyacinths*, *Tulips*, and *Narcissus* make the house very gay. To keep the greenhouse in perfect order, the plants should be gone through every day, or every other day at least, removing those which are decaying and adding fresh ones. Arrangements must be made for a succession of plants, and the cold frame will be the nursery from which many can be drawn. Cleanliness and careful watering are the two great requisites just now. A batch of young plants of *Chrysanthemum* should be growing on in the greenhouse, to get into size for repotting and placing out of doors next month.—Suburbanus.

GARDEN GOSSIP.

AMONGST the new books now lying before us, one of the most attractive is Carter's Practical Gardener, in its cover of crimson and gold. The book, moreover, is not only showy externally, but is sound and solid within. The present edition has been considerably enlarged, and consists of over 200 quarto pages, filled with wholly new matter, which has been contributed by some of our best gardeners and cultivators. There are ample calendarial instructions, the book being designed to be a "guide to the amateur," and a "reminder to the professional" gardener. Those for vegetable culture are furnished by Mr. G. T. Miles, a well-known authority, whose vegetables usually take a high place on the exhibition-table; flower-gardening is treated by Mr. T. Coomber; plant-houses by Mr. T. Baines; and fruit-culture

by Mr. J. Shoppard. Then various specialities are dealt with by competent specialists, and the result is that altogether a very useful and handy book of gardening information, from which many a useful hint may be gleaned, and embracing the whole range of practical horticulture, has been produced.

— Mr. Maw, writing to the *Gardeners' Chronicle*, mentions a red Crocus under the name of Crocus Cicalesi. In the autumn of last year, he says, my friend, Mr. F. N. Reid, of Minori, near Ravello, South Italy, sent me a single corm of a unique variety of Crocus Imperati, named by him C. Cicalesi. It was found by the side of a watercourse in the valley of Minori. To-day I have had the pleasure of flowering it, and it is remarkable for the inner segments, and the inner surface of the outer segments, being of a distinct dull red colour, in lieu of purple. The red is not a mere vinous lilac, but a distinct red, which I can only reproduce on paper by a mixture of carmine and burnt sienna. This is such an extraordinary departure from the ordinary range of Crocus colouring, that I think it worth recording.

— Mr. Diggles, in the *Journal of Horticulture*, gives the following directions to prevent the ravages wrought by the Gooseberry Caterpillar:—"Boil some white hellebore powder in water, and place it in a tub or garden engine, adding sufficient boiling water to syringe all the trees. Apply it when it is cold on a dry day, to dry on the leaves, as soon as the trees are in leaf, immediately after blooming, and before the fruit has grown. One application is sufficient for the season, and does not injure the fruit. One pound of white hellebore powder is enough for sixty trees, and is best applied with a hand-syringe." He states that he has tried this plan for years, and found it to answer.

— Amongst the choice sorts of Violets the following have been recommended:—White Czar, which produces as long foot-stalks as Victoria Regina, but requires high cultivation; Odoratissima, a single dark blue, undoubtedly the finest single Violet grown, producing immense flowers in profusion, and throwing the flowers well above the foliage. Of double-flowered sorts, Duchess of Edinburgh, creamy-white, each petal bordered with azure-blue, very large and double; Belle de Chatenay, a large white; Belle de Chatenay cœrulea plena, a large blue; Marguerite de Savoie, a large, deep blue; and Parmensis plena, white, striped with rose, very fine, will certainly displace all the older varieties when better known. To grow Violets in perfection an eastern aspect, where the morning sun only shines upon them, is requisite, and they should be planted in good strong loam, mixed with an abundant supply of leaf-mould and rotten dung. Their greatest enemy is the red-spider, but this can be kept under by the free use of the syringe.

— The Pine-apple Nursery has long been famous for its collections of bulbous plants, especially of Nerines, an undeservedly neglected but beautiful family, including *N. corusca major*, *flexuosa*, *Fothergillii*, *Fothergillii curvifolia* (the latter unmistakable, from the inward curve the leaves have at the extremities), *humilis*, *humilis angustifolia*, *pudica*, *pulchella*, *rosea*, *undulata*, and *venusta*. Mr. O'Brien has also raised three fine hybrids—*elegans*, bright pink; *cinnabarina*, yellowish-orange; and *atrosanguinea*, blood-red—all three of which form leaves before blooming.

— According to the *Ironmonger*, Clive's Patent Seed and Fruit Protectors offer an ingenious invention for protecting seeds, fruit, &c., from the ravages of birds and vermin. They have been patented by Messrs. Hickman and Clive, of Birmingham, in the shape of a stamped metal representation of a hawk on the wing, for suspension in fields and gardens. The metal bird, which is shaped and coloured in close imitation of a hawk with extended wings hovering over its prey, is made in three parts, for greater convenience in packing and transport, but is so contrived that it may be put together by any person in the space of a minute. The most effectual way of using it is to hang it as high as possible over the garden or field to be protected, for which purpose an elastic string or wire carried from one tree to another, or from a chimney to a tree, offers, perhaps, the best support, as it responds readily to the motion of the wind, and so increases the lifelikeness of the effigy. If desired to heighten the illusion, a dead bird may be suspended from the beak of the scare. The device is said to be extraordinarily efficacious in scaring birds, from whose ravages it offers almost infallible protection.

— Referring to Spiræa Thunbergii, a correspondent of *Moore's Rural*, an American paper, observes:—Of all the small shrubs I have grown, I know of none more beautiful in winter than this. Its real beauty is not fully developed, however, till the plant is at least three years old. The spray is small and delicate, and prettily recurved; the leaves are about an inch long, and very narrow and willow-like. The plant is quite dwarf, and rather solidly furnished, except it be thinned out. It is not a plant for the barbarous practice of heading-in. At present (Nov.), with the ground frozen as hard as a rock, and covered with four inches of snow, the plant does not seem to have lost a single leaf. It is a mass of rich purple and green, reminding me of some of the Japan maples. To my mind, it is, in this state, a more beautiful object than when covered with its tiny white flowers very early in the spring. It would seem to be almost evergreen.

— The new Azalea Mrs. Gerard Leigh is of the fine varieties of the amœna type which Mr. B. S. Williams has recently introduced, and is doubtless one of the best. The flowers are of good shape, about 1½ in. in diameter, of a very bright rose-colour, with cinnamon spots on the upper segments. It grows and flowers as freely as A. amœna, and will bear forcing equally well. These amœna hybrids are very useful for cutting, as they form neat little sprigs of bloom, and the flowers are not so heavy as those of the indica type.

— We learn from the *Gardeners' Chronicle* that Senecio grandifolius is the more correct name for the showy plant commonly known as S. Ghiesbreghtii, which, when in full vigour, produces dense corymbs of rich yellow flowers, more than a foot across. It is now a little over twenty years ago that it was figured in Regel's *Gartenflora* (t. 296), under the name of S. Ghiesbreghtii, but fifty years ago Lessing described it in the *Linnæa* (v., 162) as Senecio grandifolius; and subsequently Steetz described and figured what is, no doubt, the same species as S. arboreseens in Seemann's *Botany of the Voyage of H.M.S. Herald* (162, t. 31). There are copious specimens in Kew Herbarium from Mexico, Costa Rica, and Veraguas. In its native country it sometimes attains a height of 15 ft., and presents a very stately appearance.

— THE culture of ALPINE PLANTS, in conjunction with that of Hardy Perennials, was the subject of a paper recently submitted to the Dundee Horticultural Association, by Mr. T. H. Miln. In reference to Alpines, he observed that though many hardy mountaineers will not live in our borders if we overlook their natural requirements, yet with some forethought and attention they will thrive for years. A plant whose native soil is bog-peat or rocky grit cannot be expected to thrive in a stiff tenacious soil, without some preparation. In any ordinary good garden soil, a considerable number of alpine plants will thrive fairly, though there are others that require to be specially cared for. Many which otherwise would perish do well when planted in a mixture of leaf-mould and small stones, such as surface-rakings, placing a few flat stones round the collar of the plant, and covering them with a thin sprinkling of soil. The stones act as a mulch, and keep the roots moist and cool.

— THE wintering of ECHEVERIA GLAUCA may be very easily effected by the following plan, adopted by Mr. Childs, the gardener, at Garbrand Hall, Ewell, as recorded in the *Gardeners' Chronicle*:—When winter is approaching, the plants are lifted, and the soil shaken clean away; they are then tied in bunches of three, and hung on the back wall of a vinery, where they continue in perfect health. The plan is very simple and very safe.

— IN Mr. Samuel Wood's LADIES' MULTUM-IN-PARVO FLOWER GARDEN (Crosby Lockwood and Co.), we have an elegant little volume of some 200 pages, well got-up, and containing a good deal of sound common-sense instruction in the management of small gardens. The writer's natural history is, however, somewhat at fault, as, for example, when he states that the thrips (written thrip) "pierces the cuticle with its boring ovipositor, and then lies close and quite still, though it continues to draw the juices of the plant into itself." He is also altogether at fault about dressing carnations, since though it is permissible to "extract disqualified petals," it is not so "to place artificial or false ones in it;" nor does the dressing change the character of the flower, which, as a garden flower, is equally beautiful before as after the operation. As to "dressing carnations so as to alter the marking," the very idea is an absurdity. Notwithstanding a few such drawbacks, we rather like the book, for a hurried glance through its pages shows a preponderance of sound but simple instructions how to carry out the operations recommended, such as may be likely to be useful to lady gardeners.

— MR. H. C. STEWART'S HANDY-BOOK OF WINDOW-GARDENING (Barrett and Son) is a pamphlet written by the Treasurer of the St. Marylebone Flower Show Committee, with the object of assisting the class of persons for whose benefit the various exhibitions of window-gardening are organised. The effort is a laudable one, but the information given scarcely reaches down to the level of the class for whom the treatise is intended, and is sometimes altogether unnecessary, as where the composition or origin of peat or bog earth is described. Many of the hints given on practical points are useful, but the reasons given are not always to be accepted, as in the case where the necessity for an annual repotting is attributed to the accumulation of excrementitious matter thrown off by the roots, rather than to the exhaustion of the plant-food in the soil. Altogether, the little treatise is better suited for parlour-gardeners than for window-gardeners.

— IN a pamphlet, entitled FLOODS (Fletcher, Norwich), "Aquarius" shows how floods are caused in many cases by the too rapid passage of the rainfall to our streams and rivers—a result of civilisation; and he proposes to prevent the disastrous accumulations of water by making tanks, ponds, and reservoirs to catch and store the surplus. If such ponds and reservoirs were formed by the roadsides, he argues that the water which otherwise runs to the rivers would be arrested in its course; the mud and silt it carries with it, which fills up the water-courses, would also be caught; and this, in dry weather, or at convenient opportunities, could be cleared out, and not having had its goodness washed out, as is the case with river-mud, would serve to *highly enrich* the adjacent garden, farm, or pasture lands. These remarks are introductory to a scheme of the writer's for the efficient drainage of the Lower Yare, Waveney, and Bure Valleys.

In Memoriam.

— MR. ROBERT ADAMSON died on February 25th, at Elie, Fifeshire. He was, from 1843 to 1874, gardener at Balcarres, Colinsburgh, in the same county, his employers being first General Lindsay and subsequently Sir Coutts Lindsay, Bart., who made him a retiring allowance. Mr. Adamson, who was in his 70th year, began his gardening career at Springfield, near Cupar Fife, and subsequently came to England, and spent several years at Claremont and other places. At Balcarres he designed and laid out the terrace gardens, which are considered second only to those at Drummond Castle.

— LIEUTENANT W. A. NESFIELD, the eminent landscape gardener, died on March 2, at his residence, 3 York Terrace, Regent's Park, aged 88 years. The deceased gentleman was one of the few remaining officers who served in the Peninsular War. After leaving the Army his taste for painting led him to become one of the earliest members of the old Water-Colour Society, of which he was for thirty years an active exhibiting member. Later in life he took up landscape gardening as a profession, which his education as an engineer at Woolwich, and his talent as an artist, well qualified him to fulfil. In this capacity he was constantly consulted. The Royal Horticultural Society's Gardens at Kensington were planned by him.

— MR. JAMES ALEXANDER, late senior partner of the firm of Messrs. Dicksons and Co., Waterloo Place, Edinburgh, died at Redbraes on March 12, in his 76th year. Mr. Alexander was a native of Banffshire, and in 1824 went to Edinburgh, and entered as assistant in the seed warehouse of Messrs. Dicksons and Co., where his untiring devotedness to business, and his straightforward manliness, were soon recognised, and he was not long in working his way to the head of his department. He was for a short time dissociated from this firm, but on the death of the senior partner he rejoined it as partner of Mr. Scott, the surviving member. Since Mr. Scott's death, in 1862, Mr. Alexander was senior partner of the firm, until his retirement from business, two years ago.

W. H Fitch. del.

Chromo. P. Stroobant, Chent

Tulipa Gesneriana Strangwaysii.

TULIPA GESNERIANA STRANGWAYSII.

[Plate 537.]

DURING the last few years several interesting additions have been made to the family of Tulips, notably the *Tulipa Greigi* of Turkestan, the *T. Eichleri* of Georgia, and the *T. Orphanidea* of Greece, all of which, in their original or wild condition, possess a large share of attractiveness and beauty. *T. Gesneriana* is a better known and equally showy species, the apparent original of that gorgeous race of flowers which the florists have assisted in decorating with a coat of many colours, and which presents a marvellous array of rich and unique variegation. Of this latter race, our present subject is a magnificent example. Its origin is unknown, though it is probably a wild plant collected by the Hon. W. F. Strangways, who is well known to have taken great interest in the collection and cultivation of hardy bulbs. Mr. Strangways' plant figured in the *Botanical Register*, 1838, t. 46, was "found without any disposition to vary, in fields at three places near Florence," and was considered by him, on account of its form, its smoothness, and its robustness, to be identical "with the *Self Tulips*, from which the gay varieties of the Tulip-fancier are bred."

This grand Tulip was exhibited on May 25th, 1880, before the Floral Committee, by Colonel Trevor Clarke, and received a First-class Certificate for its splendid properties as a border flower; it was then called *T. Gesneriana magnifica*, a name which has since in the official records of the Committee been changed to that which is here adopted. The flowers are of very large size, and of the richest deep crimson colour, which Mr. Fitch has well reproduced in the drawing, though the high lights of the chromo-lithographer are somewhat harsh in the subjoined plate. We are indebted to Colonel Clarke for the flowers represented, and for the accompanying note respecting them :—

"The history of this fine plant, as far as I am concerned in it, is as follows :—Many years ago, Mr. James Carter, who was very curious in such things, gave me a bulb of the Tulip in question, saying that it was given to him by Mr. Strangways, and it was a 'kind of Oculus Solis.' Two years ago I was so struck with the effect given by the sun shining brightly through a large bed of it, that I determined to grow a batch expressly for the purpose of distributing it amongst our Fellows. For this purpose a number of bulbs were last autumn placed in the hands of Mr. Barron, and a few were also given to a friend or two about London. I believe it to be the plant figured in the *Botanical Register*, and Mr. Moore has confirmed me in my opinion. It is remarkable that, although presumed to be a wild form growing near Florence, it has never, here, produced a perfect capsule, being, apparently, quite sterile. The chromo drawing scarcely indicates the handsome dark eye.—R. Trevor Clarke."

MR. HORNER'S LECTURE ON THE AURICULA.

WE are indebted to the Rev. F. D. Horner for the opportunity to publish, *in extenso*, his very interesting lecture on the Auricula, delivered at the Show held by the Southern Section of the National Auricula Society, in the Royal Horticultural Gardens, South Kensington, on April 19th :—

"I am asked to say a few words to you this afternoon upon the Auricula, which is a special feature in the flower show, contributed by the members of the National Auricula Society. With the flower in its beauty before you, my pleasant task can only be to say of it that which it has no power to express for itself. Mere praise to its very face would be as idle and unhappy as holding up a coloured picture to the inimitable original in life. But something of the past history of this flower, and something of the qualities that constitute its grace and beauty in the eyes of those to whom it is a very dear favourite, will add, I trust, to the interest with which you will regard and remember our flowers to-day.

"This plant has so long been under the care of man, that, like his domestic animals, though sprung from a naturally wild and hardy thing, it would not live apart from him, and without that attachment on his part which it seems to so faithfully appreciate and reward.

"Some of the plants here to-day, you are wont to see in their accustomed place season after season, some even in successive shows. The Auricula is, among them, one brief spring-day, rare enough to be a floral phenomenon. It flashes into sight like some meteor across the sky, and is gone. It is apparently a new-comer, but in reality it is one of the very oldest of show flowers, for there were exhibitions of Auriculas in Lancashire more than 150 years ago. Indeed, to anticipate a little, I might have brought you a plant of a venerable sort, called 'Jingling Johnny,' shown at Eccles, then a straggling village near Manchester, a round century since. But the public career of the 'Jingler,' as he was familiarly called, is closed, his long days nearly numbered, and no reasonable extension of a class-list could now set him up again on a pinnacle of floral fame.

"Now we are accustomed to see such excellencies of form, colour, and habit in exhibition plants as are not found in the uncultured species from which they may have sprung. But in so high degree have all these points been gained in the Auricula, that it is nothing short of an acquired flower, developed past resemblance to any wild original.

"I propose to divide my subject into three sections, and will trust to make none of them too tedious for your patience:—

I. The first shall be upon the derivation and history of the flower.

II. The next, the Auricula from a florist's point of view.

III. The last, a very brief touch upon its culture—not that I have any secrets which brevity should conceal.

"I. If there are any among my hearers who, so far, only regard this flower with a cold and distant admiration, as a new and rather curious feature in a flower-show, that ought to have novelty now and then, to keep it up, I shall be glad if, in any degree, I can show them how very much more than this a flower is to those who love it.

"DERIVATION.—In the Botanical Census, by which plants are grouped according to natural orders, the Auricula is classed with the Primulaceæ. The family is a large one. Some of its members bear such resemblance to our most familiar type, the Primroses, as to be easily recognised for Primulas; others are apparently so far removed, both from it and from each other, as to seem no blood relations at all, but only distant connections-in-law—botanical law. However, I shall not here introduce a larger circle of the Primula family than may interest you, as showing the resemblance and dissimilarity of consorted plants.

"The nearest native relatives of the Auricula are the Bird's-eye Primrose (P. farinosa), frequent in the North of England in marshy places, and on the broken banks of little moorland rills; and also Primula scotica, of Sutherland and Orkney. But, after the Cowslip and Polyanthus, what a mixed group the Primulaceæ appear! The Cyclamens belong to it, and the more aspiring Dodecathcons of America, with their not far dissimilar flowers, clustered on tall stalks, as if they were the bold Oxlip form of the primrose Cyclamen. Another class-mate is the Anagallis, A. arvensis, being the red Pimpernel, of our arable lands; and A. tenella, the slender little beauty that threads its way daintily among the green mosses on the peaty moors. Bitter marshes by the sea contribute a member to the order in the Sea Milkwort (Glaux maritima); while in that lovely aquatic, Hottonia palustris, the water violet, we see the Primulaceæ taking a decided plunge under water, and here, as it were, is a veritable mermaid Primula. Thus from the top of a mountain to the bottom of a pond, we have primulaceous plants, as widely separated in habitat as in habit.

"Besides the Primula Auricula of the Alps, the remote ancestor of our cultured flower, and one given by Paxton as hortensis, a European plant, with name suggestive of some degree of cultivation, and flowers described as variegated, there are several primulas of Switzerland and Southern Europe interesting, as bearing a resemblance to the Auricula on a small wild scale. There is P. marginata, with serrated mealed foliage and lilac flowers, with rudiments of that meal in the centre which is intensely developed in the Auricula. Also P. Balbisii, with a habit of foliage in white and green quite that of the Auricula, and half-pendent flowers, 'like cowslips wan that hang the pensive head,' and also slightly mealed in the eye. Again, P. intermedia, pubescens, viscosa, villosa, and others, with pink and purplish flowers, have the habit of diminutive Auriculas. Still, all primitive and allied forms are a far remove from the derived flowers of so long a period of culture as extends over 300 years, for Gerard states that prior to 1597 there were Auriculas in English gardens.

"These early varieties were yellows, browns, and purples, and as you look upon the beautiful flower to-day, in its jewellery of emerald and pearl, and its velvet textures of many lovely colours, you will wonder how all this investiture of different orders of beauty descended upon a little pale wild flower of the Alps.

"The first advances from the purely wild type were the results of carefully seeding this sportive flower, which, in its attribute of infinite variability from seed, has the fundamental qualification for being what is known as a florist flower. But a more full and rich illustration of this than written history well could be, are the interesting revelations which the Auricula makes to the raiser of seedlings. In them the history of the past will repeat itself in varied retrospect, and among those that must be discarded as missing the standards they were meant to equal or excel, are many whose faults are but tracings of their derivation towards its distant sources. They show how petals now substantial, round, and flat, had been flimsy, frilled, and pointed; the white meal thin and ill-defined, the curious edge of green, a slight and broken rim.

"HISTORY.—In a glance at the history of the Auricula, there comes, of course, the interesting question of its first introduction into England. *When* is, perhaps, not so exactly known as *where*, on which point there is the evidence of well-kept, unshaken tradition, corroborated by local evidence that its early English home was especially Lancashire. It is known that Flemish weavers in woollens, driven from their country by persecution for their faith's sake, settled about 1570 at Norwich, Ipswich, and in Lancashire villages in the neighbourhood of Rochdale and Middleton. As things of home too dear to leave behind them, these refugees brought with them their favourite flowers, the Tulip and Auricula. It is no matter of surprise that for about 50 years after this we have no record in Auricula culture. These early growers would doubtless, for a time, be shyly looked upon as aliens, and it would lead them to keep their occupations and interests a great deal within the bounds of their own communities; but in 1725, we have evident proof that the culture of Auriculas was established in Lancashire. Parkinson, in his *Theatre of Plants*, 1640, names 25 varieties of Auricula Ursi, or Beares Ears, or French Cowslips. They are described by colours such as heaven's 'blew,' striped and double purple, blood-red, sundry blushes, paper-white, and yellowish-white, &c. In an old manuscript of 1732, and which was published in the *Florist* many years ago, Bearcs Eares or Auriculas were quaintly classed as 'pures,' probably what we should call selfs; 'flakes or stripes,'—which I confess I do not recognise by the description; and also 'bizarrs,' spoken of as admirably variegated with meal and colours, and raised in England or brought from thence.

"Auriculas were grown abundantly in the Lancashire districts until about 1830, when a great change in the habits of the people, who were hand-loom weavers, began to take place. Steam power and the factory system were being developed about 1825, and, during the transition from hand to power-loom weaving, those whose bread 'came through the shuttle-eye' felt the change severely, and numbers of them were for a time in great distress. From the hand-loom that filled the long window they could now and again in the day break their time, and work longer at night, and in this way their

favourite flowers received the most constant attention, which at the same time refreshed the toiler himself with a healthful, winsome recreation. But the long peremptory hours of a factory day rendered all this impossible. The great hard-featured mills grew up over green fields and garden grounds, mammoth organisms in brick and mortar, stone and iron, seeming in their high chimney-stalks to send up a mighty, hideous sort of flower-stem, blossoming with black wreaths of smoke and sulphureous perfume! Then the scattered villages grew and conglomerated into towns, the light of the hand-weavers' windows died out, and seemed to be concentrated in the gaslight glare from the long storeys of windows in the mills; the familiar clatter of the old handloom ceased, and the click of the shuttle that wove the silk or wool, as the tick of the old clock spun out the time.

"Under the changes of those days many ceased to grow their old favourites for lack of time or space, and because they would not see them languish under any unwonted neglect.

"Their little shows had nothing of the grand accessories that are here, but the very spirit of vitality was in them—sincerity, patience, and love. They were held in the upper room of some old inn, and made a very lively sensation for miles around, a stir like a village wake or fair.

"What excitement it was for the anxious exhibitors, assembled in the room below, to wait for the winning plants being sent down from the 'upper element,' where the judges were deciding fates! In the later part of the day followed songs and anecdotes and florist gossip; and at going-home time, the assembly dispersed, with the first-prizemen conspicuous by a gleaming copper kettle in hand. Always kettles for the best flower in the room, and for the first in every class. Perhaps none was a prouder man that day than he who, as a new beginner, carried the 'Colts' Kettle' home!

"The Auricula has been a flower neglected for many years till lately. For inexorable causes, such as those that parted it from old friends like these, we can feel sympathy, but not for every reason that has made it now so scarce. Mr. Lightbody, whose name is so associated with Auriculas, used to tell me he had many wasteful customers, who every spring would write for a relay of large plants, much as they might order spring bulbs from their seedsmen. They kept Scotland going as we keep Holland; for Lightbody, who grew his own plants mostly in long-legged garden frames, would have been again and again exhausted, but for being able to fall back on large collections in different parts of the country.

"The Auricula is no such forgiving plant as the docile hyacinth, that in return for having its heart scooped out like an apple in the cook's hand, will return a hundredfold in good for evil, in repaying the unkindest cut of all with a handful of useful off-sets. Auriculas grown only for a brief display, and left to pine in neglect afterwards, are not in the hands of men worth the name of florist.

"I have spoken of the Auricula in Lancashire, for that is such a representative county in the history of the flower; but fifty years ago we find by old records that almost every district in Yorkshire, Staffordshire, Cheshire, as well as Lancashire, had its circle of Auricula-growers. So, too, had many other counties. In Cambridgeshire lived Richard Headly, a renowned florist, and the raiser of one of our best Auriculas, George Lightbody. There were also shows and societies in the home counties, and many growers about London, where Page's Champion and many other sorts of lesser fame were raised.

"But the Auricula is the oldest florist flower in precedence of excellence. There were good Auriculas when there were no Roses such as there are now; when the Pelargonium was a thin imperfect thing; the Cineraria a star far from her present magnitude; the Calceolaria had little of that fine inflation in which it now appears, a floral exposition of the ambitious frog in the fable, who perished miserably in the attempt to enlarge himself to something much above his sphere; when Fuchsias were almost as they had been found, and the Gladiolus was yet but a botanical accuracy.

"I am indebted to the researches of one of our oldest florists, Mr. John Slater, for some interesting information about the earliest edged Auriculas. He has spent a long life in the very centre of Auricula-culture, acquainted with many a grower, and even raiser, of the old sorts. When I mention names, I must ask you to attach more than a mere nominal importance to them, in that our Auricula being a derived flower, not found wild anywhere, no vast importations and auction sales of it are possible. Names have therefore here the weight of species. The raiser is the introducer, and his little garden is a native country.

"The very names are largely suggestive of the estimation and good report in which the flowers were held by their raisers. Hence they are expressive of greatness and supremacy, and we have, *e.g.*, Champion, Hero, Conqueror of Europe, Rule-all, Revenge, Bang-up, Glory, Incomparable, Freedom, Imperator, Ringleader, Complete, True Blue, and so forth. Three-fourths of the old growers were also gooseberry-growers; and here, too, are names of like great import: Conquering Hero, Overall, Leader, Thumper, Crown Bob, London, Wonderful, and not last, Roaring Lion. No one had the diffidence to name his new pet berry Second Fiddle or Knock-under. If he were a bird-fancier, he did not select Tom-tit or Humming-bird, but chose him Ostrich, Eagle, or Peacock. It is quite time that our newspaper press, from the large dailies down to small provincial weeklies, had their seeming ignorance of what the big Gooseberry really is revealed to themselves. It might be that no dish of the genuine berry had ever smiled on editorial tables, or we should not have the big Gooseberry a gibe and synonym for that which is vapid and inflated. From the florist, however, has spread a desire for great names to the producers of excelling fruits and improved vegetables, and that bold challenging is now indulged in alike by the Knights of Flora and Pomona, and of the presiding deity of the kitchen-garden, Chloris, the Goddess of Greens!

"The earliest-known varieties of Auriculas were Rule Arbiter, a green-edge, and Hortaine, a white-edge; these can be traced back to 1757, Potts's Eclipse following ten years later. As years rolled on, there were other Eclipses, notably Cockup's, and from this some better flowers were raised. All the green-edges of that early period were of a pale colour, and often bare in the dust or farina. Taylor's Victory was a highly-prized green in 1776; but of all the principal varieties of that time, only Jingling Johnny, a green of inordinately broad edge, Lord Lee, a lovely carmine flower, but without meal, and Pillar of Beauty, a stiff and starched old white, are in existence now. Improvements were patiently carried on, until in 1821 we begin to find some flowers that are good or familiar names. Colonel Taylor and Booth's Freedom appear upon the scene, two green-edges of which a grower with good specimens would not be ashamed to-day. In grey-edges Kenyon's Ringleader appears, the ancestral flower of that grand family in the greys in which Lancashire Hero, George Lightbody, and Richard Headly are flowers

of such high mark. At that time, Taylor's Glory, which no doubt is in the show to-day, was a first-prize flower, along with Lee's Bright Venus, and others; and the best selfs were Whitaker's True Blue, still extant, Grimes' Flora's Flag, and Redmayne's Metropolitan. I remember this last being sold for 24s. a plant, but half a century ago it grew in garden borders, and might be had for 2d. a head.

"Ten years later (1831) the green-edges were a stronger class by several flowers still to be found in old collections. Such were Pollitt's Highland Laddie and Standard of England, but nearly all the first prizes fell to Colonel Taylor. To the greys were added Sykes' Complete, a good flower grown at present, and Grimes' Privateer. White-edges were augmented by Favourite and Incomparable from Taylor, the raiser of Glory, and by flowers of less note. The selfs have additions, but the best is Othello, a round-petalled black flower, that was much thought of. Another ten years (1841), and the most notable green-edge is Page's Champion, once very plentiful, especially with the raiser, who was wont to throw surplus off-sets into the Thames, but now exceedingly scarce, and one of the very few Auriculas difficult to grow in an impure air. At this period came Conqueror of Europe among the greys, with great sensation, and Ashworth's Regular, a small, correct white-edge, still valued by some old growers in the North.

"By 1851 some of Lightbody's flowers appear, such as Star of Bethlehem, but that and all others were outshone by the first appearance, in 1846, of Lancashire Hero, Robin Lancashire's magnificent grey. Like many other light-mealed greys, it has the power of blooming in a green-edged form, and that generally occurs either on a truss from a young plant, or one formed very early on an old one. The bloom of its middle-life at mid-season is rich silvery grey. This surprising flower is worth a word by the way. When first shown, in 1846, it was placed second to a flower inferior to it in character, Grimes' Privateer. Lancashire had then eight or ten plants of his seedling, and in his grief hastily sold all for a trifling amount. He offered a good deal more to have them back, but could not get them. From their first purchaser they passed to Mr. James Cheetham, by whom it was eventually sent out. But it is truly Lancashire's Hero, and no name but that of Robin Lancashire should ever have been associated with this flower. It is the noblest type of an Auricula, and at its best there is no grey better. Our opinions are, however, divided, and some of us hold by Headly's George Lightbody as the model. This is a grand flower, that was sent out in 1861, and the two greys will probably never pass out of cultivation while Auriculas are grown. They will meet immense competition, and have worthy companions, but they are Auriculas right properly, and no florist wishes to see them discarded, but he will not rest till he has their equals. By 1861 we also had Campbell's Pizarro, then our brightest, roundest self, of soft brown, together with more of Lightbody's flowers; and Campbell was busy for years at this time, trying to give us a crimson self of standard properties. His work at that time extended over many years, and is a good example of a florist's patience. He started with a cross between the old carmine flower Lord Lee, and a puce-coloured self of Martin's. At once he got the colour, but he lost the paste, Lord Lee having none; and when Mr. Lightbody reported to me his neighbour's success in two crimson selfs, Duke of Argyll and Lord Lorne, there had been failures past all count.

"II. I pass on now to speak of the Auricula from a florist's point of view, and I cannot better lay the subject before you in the abstract, than in the words of a brother-florist, the Rev. F. Tymons, who would gladly have been with us to-day, and before whom the Auriculas here have often stood for judgment. He says, 'The points of a good flower are not arbitrary, as the uninitiated sometimes say, but really appeal to canons of beauty, recognised and allowed by *all* who have made a study of the plant. Thus, as in other matter of beauty or taste, the verdict of those most skilled in the subject is that which is entitled to weight. Rigid attendance to these points is of proportionate importance in *any* flower which is largely the creation of skill, stretching forward to some ideal standard. Capability of modification under culture, so as to draw nearer and nearer to that standard is one of the prime distinctions of "florists' flowers." Among these, none probably are more artificial creations than the Auricula. Hence the importance of a thorough knowledge of what a good flower *ought* to be.'

"Auriculas are divided, first, into two distinct groups, separated from each other by the marked feature of mealed or unmealed centres. Those destitute of meal are termed Alpines, and their essential qualities are the unmealed centre and the heavily-shaded petal. The highest form in the Alpine is the shaded petal, and the golden centre, which last is not difficult to obtain, except in such as have lilac, or any shade containing blue. To admit shaded flowers of these tints, it has been found necessary to allow a pale, almost white centre, unmealed, of course. This section is the hardiest and most prolific of all Auriculas, and those that are grown in garden borders are Alpine blood of more or less inferior strain.

"The other group is the Auricula Royal, containing all the edged classes, which constitute the highest and most wonderful development of this flower. The green-edges hold the highest rank of all, and are the only class in which a mealy habit of foliage never occurs. The contrast of their zones of emerald, black, and white, in a setting of silver leaves, would be very beautiful; but Nature denies this combination, though often granting the converse in white edges with green leaves. The green-edges have required the most winning, for the edge must be absolutely pure from meal, and that has been found a very trying test. Now, however, this splendid property is becoming more brilliant and more fixed, but that it has proved one of difficult attainment is shown by the very few true greens among the old varieties.

"The grey-edges, a strong class, are those in which a sprinkling of meal, like hoar frost upon springing grass, lies delicately over a green edge, without hiding it further than to give a pearly effect, as of a silver dew crystallised and secured upon it.

"The white-edges are exquisitely fair and lovely—a very favourite class. The whole face of the flower, except the dark velvet rim of ground colour, must lie deep under a snowy meal, usually of finer grain on the edge than on the middle of the flower. Good, true whites have been very few indeed among the old flowers.

"Then follows that beautiful consort of the edged classes, the Self. This, with its pure, densely-mealed white centre, and colour of one velvety, unshaded, and decided hue, is a very different flower from the Alpine, and not the least approach of the one to the properties of the other can be tolerated.

"Such are the differences that form the class distinctions in the Auricula. We must look a little closer to see what those properties are that give expression and harmony to all. The perfection of a whole lies in the perfection of its parts. I take a single flower to pieces part by part. In the centre, the tube, with its contents, stamens and pistil, is a little member, but one of mighty import. So is the

tongue in human kind, so is the tail of the dog among beasts. In power and variety of expression, these two extremes meet. Their equivalent in the Auricula is its tube. No outer brilliancy compensates for a central failure here. The whole truth of the flower lies in this little well! It should be circular, sharply cut, and bright yellow. A rich gold tube bathes the flower in a sunshine of its own, and lights up into life and radiance features that in themselves may be dull and common-place. But the tube that is pale green casts a moonlight effect around it that strikes all brightness dim and cold. Not only do we dislike, but we distrust a pale tube in the Auricula. One thus weak is never otherwise strong. Watery colours are associated with thin textures, and thus a flower so constituted cannot live out half its days. Like a noble ship with all her canvas set, but a rotten timber at her keel, the beautiful flower goes down, all standing.

"Florists are called punctilious and severe—so they are, but it is with reason that they are particular to a point and exacting to a shade.

"The Primulas being dimorphous in the relative position of their stamens and pistil, it has been thought a fanciful and narrow choice that we should adhere to that form only wherein the anthers are set round the mouth of the golden tube, and the pistil at the bottom, rejecting the long-styled or pin-eyed arrangement. With what comparison shall I illustrate the reason of our choice? I will take, for example, the difference between the eye of sculpture and of life. You know the vacant stare of the one, the vivacity and soul that speak and sparkle in the other. The stony, lifeless eye in an Auricula is the pin-eyed tube, with the set, expressionless pistil its one hard-set feature. But where the delicately gold-dusted anthers are set round the eye of the flower, and the obtrusive stigma is all but sessile on its ovary below, we have the fulness, softness, and play of what is happily termed the 'mossy eye.' It is the counterpart in the flower of the living eye that is so much in the character of a face.

"But I pass on to the next feature on the coloured disc, and that is the white circle we term the paste. This is a dry, snowy meal, and it must be round and broad, and bright and dense. Where these properties are wanting, the flower has, according as the faultiness may be, a sleepy, unwashed, ill-tempered, mean, cramped, crabbed, miserly look. Thus, a lively paste and a golden tube, each sharply cut and circular, are supreme points in a good Auricula. Now we come to a zone or circle further outwards on the corolla. What contrast to snowy meal, lovelier and more rare, could a flower give us than a sudden change to the softest velvet? Such is the texture of the ring of colour known as the ground or body. Black has been the most usual, largely because black was the favourite colour with so many of the old growers. There have been strange local antipathies to anything but black, a prejudice which we will hope to see overcome by the winning argument of equally true and beautiful edged flowers with blue and crimson grounds.

"It is true that the best of the old flowers are those with black body colours; but the reason is that the Auricula, as if unwilling to cast her pearls before the unappreciative, has made few offers of gifts that were not sought, and would not be valued at their worth. But in whatever colour this velvet zone exists, it is imperative that it be pure, unspotted, that is to say, with any of the meal that may lie on the edge beyond it, or on the paste within. Colours also should remain true and fast—not fading into weaker shades before the other parts of the flower grow old. The last remaining portion of colouring on the flower is that wonderful circle of green, or grey, or white that bounds the blossoms, and determines by its nature the class to which a variety belongs.

"I will gather into one word that important point, the *share* which the flowers of all the classes should apportion to all their zones, and that single word is BALANCE. Taking the pistil as the centre, then across the half-flower as a radius line, the tube, paste, body, and edge should be in the proportion of equal breadths. The tube should be bold, with highly-developed anthers, and the paste quite its full breadth, and, indeed, in the case of the Selfs rather over that, for in them the body colour really represents two zones, and, therefore, for good balance the paste should represent rather more than one, or the flower will look heavy. Body colours flash towards the edge, but are not to run out at the petal-corners, or an angular look is the result. However, the body should not consist of only flashes, but have a solid foundation-ring, the more solid the better. Where this is not so, the pencilled work has a thin and scratchy appearance.

"III. CULTURE.—As to the culture of the florist Auricula, it is not within the province of this lecture to give you a complete calendar of cultural operations. But it may be amusing for a moment to peep into the potting-sheds of the old masters. It was a school of cookery for the Auricula, in which the plants themselves were often victimised. The compost-heaps were not so much an honest provision-shop for the flower, as its confectioner's or druggist's, where it was forced either to make itself ill with sickly sweets, or was overdosed with dire stimulants, till after a flash of burning wasteful life, it died. One professor of long ago, writing in dialogue, conducts a horrified neophyte round his compost-yard, where the young beginner is completely upset by an inspection of horrible effects from the slaughter-house, sugar-refinery, and other sources of refuse. '*Our compost,*' says the master, over a vile compound, '*is now in fine killing order; it would poison an oak-tree!*' No; cut for your plants a few sods from a pasture which the buttercups will tell you is sound and rich. Ramble in the woods, and instead of a cornucopia of wild-flowers, bring back what you can carry of mellow leaf-mould; ask the gardener for a slice of the hot-beds that grew last year's melons or cucumbers; make about equal parts of all you have, with, say, charcoal to keep it open, and you have all the Auriculas will care to ask for. As for the rest, keep their feet warm—*i.e.*, their roots well drained: their clothes dry in winter—*i.e.*, the leaves from wet. Remember that while the plant itself is hardy beyond limit, yet its refined blossoms are inexpressibly tender; that it belongs to the pretty family that loves a partial shade. Think how the bare trees and hedges let in all the winter sun upon the sleeping Primroses; how the young leaves on the boughs temper the sunshine over them in spring; the full leafage hides them from it all the summer.

"And if you wish to grow seedlings—which you should—be as much like Nature to them as you can; sow them when she does, as soon as ripe; cover them as she does, which will be not at all, except by something that may represent the agencies of shade and moisture under which the young seeds grow, say, a piece of glass over their cradle-pot; and when they bloom they will be a great reward.

"Here I draw to its close my story of a florist flower. I have wished to show you what a store of interest it has for the true florist. He may be a toiling man, pent up in a dirty, ugly town, but here is a flower that will smile to him in that captivity, and look a contentment that imparts itself—thriving as though the smoke-drifts were but natural clouds, and the dry, hard shadows fell from waving

boughs. He has his few plants, and he will see more of Nature's features and variety in a frame of Auriculas, than another who has no heart, and so no eyes, for such things, will notice in a whole landscape. In that innocent taste there is a pleasure very deep and lasting, and how much does the companionship of a friend like-minded add to it! The florist would rather have the steady, continual sympathy of a brother-florist the year round, than beat a dozen strange competitors at a show. He must needs feel proud of his plants on their exhibition-day, but that short excitement is only a small part of his whole patience and reward. Mere money profit is no motive in his attachment to his rural tastes and floral favourites. At the exhibition-tables a good loser, and a modest winner, he is not the sordid mercenary man of whom there might be said, as it sparkles in the wit of Thomas Hood, that for him '*the great God Pan is dead, and Pot reigns in his stead!*'

"It is remarkable how those who have loved this flower have loved it to the last. I could tell you of George Lightbody, who in a long illness would have a favourite Auricula at the bedside, and plants brought up that he might see what needed to be done; of Robert Trail, who, past his eighty years, came from Edinburgh to see the flowers of his raising in our hands at the Northern Show; of Richard Headly keeping to a few Auriculas among the last of all his flowers; of old Robin Lancashire coming from his famed florist county to my own of the White Rose, to see the Auriculas, and his eye bright with an 'unfamiliar brine' at the sight of Lancashire's 'Hero' in his great glory.'

"It is no small thing to say of a favourite flower that it has been the first cause of many true companionships and fast friendships, that will endure till all human interests are at an end for us."—Francis D. Horner, *Kirkby Malzeard, Ripon.*

LANTANAS.

INDOORS AND OUT.

IT is so late in the season—especially in such seasons as the last three or four have proved—when these pretty plants become attractive, that as bedders they are not desirable, at least in this locality. When grown in pots and plunged in the mixed borders, they make a nice variety towards autumn, and if taken up and housed before they are injured by the frost, they become useful plants for conservatory or greenhouse decoration, and will continue in flower for a long time.

For this purpose good-sized plants are desirable, and these should be treated as follows:—Towards the end of March or the beginning of April turn the plants out of their pots, reduce the balls of soil, and pot them in smaller pots, using a nice light compost of loam and peat, with a little sand. Place the plants in a vinery where there is a little heat, and there they will soon make young growth and fresh roots. Towards the end of May, they should be shifted into pots two or three sizes larger than those in which they were first potted, using a compost somewhat similar to that employed before, with the addition of a little rotten manure. The plants should then be placed in a cold pit for a few days, to harden off. About the beginning of June they may be plunged in the mixed border, or they may be plunged in a bed by themselves. The rims of the pots should be covered with an inch or two of soil. They will not require much watering during the season, except in case of very hot weather, or during a protracted drought, and then they will not need much, if they have a mulching of rotten manure or old tan. Towards the end

of August the plants will begin to flower profusely, and will be very attractive, but as they suffer from cold, they should be lifted and housed before they receive any injury, and they will then continue for a long time to yield a profusion of flowers. When they have done blooming, they may be put away where they are safe from frost until they are required in spring, but the soil should not be allowed to become too dry whilst they are thus set aside. The plants are readily increased by cuttings. —M. Saul, *Stourton.*

SKIMMIA FOREMANNI.

A VERY interesting plant was shown at the Edinburgh Spring Meeting of the Royal Caledonian Horticultural Society which was little noticed, doubtless from the

fact of it being placed amongst the gorgeous coloured Azaleas,—namely, *Skimmia Foremanni*, a new hybrid (S. japonica × oblata), which was awarded a First-class Certificate. The plant was raised and exhibited by Mr. Foreman, of Dalkeith, who crossed S. japonica with S. oblata, and out of a large number of seedlings, selected the only female which appeared, and this he again crossed with one of the best and most vigorous males, a brother of the female, which he named S. oblata rosea. The result is a most beautiful scarlet-berried plant, with large leaves, strong and vigorous in habit, and in every way what I consider a very valuable plant. I have not the least doubt but from this handsome berried female Mr. Foreman will ultimately rear a finè progeny of Skimmias, which will become very popular. They must do so, not only because of their ornamental character, but from the fact that they are so thoroughly hardy, as the whole batch of seedling males, which were planted out, have withstood this winter's frost. S. japonica has stood out well with me, and we have had 11° below zero. We have a row of them forming the backing of an herbaceous border. Of course, they were covered with snow, but for all that they may be ranked, I think, as hardy.—H. KNIGHT, *Floors*.

NOTES ON TREE CARNATIONS.

IN visiting private gardens, both large and small, I am often surprised not to find these plants more generally grown, especially considering the interest they usually excite in all lovers of flowers, when seen in bloom during the winter and spring months; and also considering their fitness for supplying choice flowers both for personal adornment, and to fill vases and epergnes for room decoration. Having for several years past grown a large batch with a fair amount of success, perhaps a few notes on the way we treat them, may be acceptable to at least some of your readers.

A word first as to varieties. Our stock is made up of the following:—Oriflamme, Valiant, Zouave, Raphael, Covent Garden Scarlet, A. Alégatière, Miss Jolliffe, La Belle, and a very dark variety which I am told by a good authority is the true old Clove Tree Carnation; anyhow, it has the true clove scent, and is much prized on that account. The first six named are of different shades of scarlet, some self-coloured, some flaked; Miss Jolliffe is, as is generally known, a pale pink variety of great excellence, and La Belle is a white variety, very useful, but not so strong in constitution as the rest of the collection. I have no doubt there are many newer varieties than those named above; in fact, we have had a larger collection, but our present lot is somewhat the result of natural selection, since we have only propagated those that we found gave us the greatest quantity of flowers.

We propagate one-half of our stock annually in March and April, keeping those struck, say, last spring for blooming early next autumn, since we find these to bloom more freely during the months of October and November than those struck the same year. We generally plant them out some time during the month of April, on an east border, about 18 in. apart, placing a stake to each for support. We keep the blooms pinched off during the summer, and lift them in September, reducing the balls carefully, potting them into as small-sized pots as we reasonably can, and keeping them close in a cold pit until established. We then put them into an intermediate house to flower. We find that all Tree Carnations, both spring or autumn-struck ones, bloom best during the winter months in a night temperature of about 50°, though the warm end of a greenhouse will do for them. We find them to strike fairly well by taking off the points of the young side growths, cutting them at a joint, and leaving about four pairs of leaves. We insert these round the sides of 4-in. pots, say six or eight cuttings in a pot, in any light sandy compost, and plunge the pots in a bottom-heat of about 85°, keeping them shaded from the sun, and the frames as close as possible until they are rooted. It is a great advantage to them if the pots can be placed altogether, and a handlight, or a rough frame with a large square of glass on top, can be placed over them. As soon as they are rooted, we pot them singly into 3-in. pots, and keep them in a close frame or dung-pit until established; then, say about the end of May or early in June, we finally shift them into 5-in. and 6-in. pots, according to the size and habit of the plants. The best compost is a mixture of three parts good loam to one part of leaf-mould and river-sand together, adding about a peck of dry fowl or pigeon-dung to each barrow-load. A pit from whence bedding-plants have been taken is a good place in which to stand

them for the summer months, care being taken to put a good coat of ashes on the ground to prevent worms getting into the pots. If well attended to with water, duly staked, and the blooms kept picked off, they will make fine plants by October, when they can be placed in any cool, airy house, from whence they may be introduced into a warmer house for blooming, as required.—H. J. CLAYTON, *Grimston Park Gardens, Tadcaster.*

AURICULAS AT KIRKBY MALZEARD.

READERS of the FLORIST AND POMOLOGIST know the Rev. F. D. Horner well by his excellent papers on the Auricula and other florists' flowers. Many of them will also have had the great privilege of looking over the collection of Auriculas and other choice plants grown in the Vicarage garden at Kirkby Malzeard. The collection is not so large as many persons would be led to suppose, and during the last few years many of the old varieties have been discarded, to make room for the numerous seedlings raised and selected by Mr. Horner. The selection is not the easiest part of the process of seedling-raising. The fact is, it depends much upon the part of the plant from which the trusses spring, as to whether or not the pips will be up to the required standard. For instance, *John Simonite* (Walker) is perhaps the best white-edged Auricula yet raised, yet Mr. Simonite assures me that most fanciers would have discarded the plant when its first flowers opened; if it throws a centre truss it is worthless, and the same may be said about many others.

Very few persons would believe the amount of patience necessary before the great results achieved by Mr. Horner can be produced. The Auricula fancier has a standard set before him to work up to, but very seldom indeed can all the points which are required be obtained in one flower, though the nearer it comes to the standard of excellence, so much the more highly is the flower valued.

Beginning with the Green-edged class, the material available to work from ten years ago was very imperfect. *Prince of Greens*, a variety with good petal, and very perfect green-edge, was coming into notice, but it had also some serious faults; while *Champion* (Page) was weak in constitution; *Colonel Taylor* (Leigh), was inconstant; and *Freedom* (Booth), with other faults had angular paste, and seldom bore more than three pips on a truss. After ten years' patient but pleasant labour, Mr. Horner has now obtained green-edged flowers, very perfect in form, with good substance of petal, the green pure, without the least spot. In carefully examining the seedlings with Mr. Horner early in April, we marked an 1879 seedling, No. 12, as the best; the form of flower and substance of petal is that of George Lightbody, the edge is quite green, the ground-colour black, the paste dense, pure, and white, and the tube yellow. *Enterprise* was next to it, with good olive-green edge, well-opened petal, and dense round paste, black ground, and yellow tube. *Emerald* had a rich dark-green edge, dark maroon body-colour, dense paste, yellow tube, and large truss. *Sybil* had a lively green-edge, maroon ground-colour, good paste, and yellow tube; a more perfect flower and better grower than Champion. *Benjamin Simonite* is thought very highly of by Mr. Horner, but it is slow of increase; and *Richard Gorton* will hold a high position as a good green-edge.

In Grey-edged flowers *Ajax*, raised some years ago, has good qualities, but lacks the refinement of George Lightbody, and may not come so good as old Robert Lancashire's notable variety, Lancashire Hero.

In White-edges there are some striking flowers, and many are advances on the best old varieties. *Water Lily* is a large and promising variety: the edge pure, the ground black, the paste broad and pure white, the tube golden; it has distinct green foliage. *May Queen* is a round, smooth flower, with good white edge, black ground, and yellow tube. *Bean Blossom* is in the way of Smiling Beauty, but a more perfect white-edge, with quite a black ground-colour and golden tube.

In the Selfs there was also much room for improvement. A few years ago *Pizarro* (Campbell) was considered the best self, but the petal of this sort is not of great substance, and soon goes off. *Ringdove* and *Heroine* have been publicly exhibited by Mr. Horner, and are well-known valuable varieties. Other fine things have now been raised, some of them very distinct in colour, and all of them of good shape; *Constance*, for example, is a

W. H. Fitch del.

P. De Pannemaeker, Chromolith. (Gand)

Peach Sea Eagle.

cobalt-blue, with good petal, and pure white paste. *Dora* is remarkable for beautiful foliage; the edge is blue, with a mauve tint, and it has good paste. *Selina* is a good maroon-coloured flower, with round, dense paste, and large pips. There are two good crimson selfs, which are certainly improvements on *Duke of Argyll* and *Lord of Lorne*, one of them having green foliage. Mr. Peter Campbell told me that he had been for many years trying to obtain such a variety, but it has been reserved to Mr. Horner to accomplish it; a good crimson with green foliage would be a great hit. *Sunshine* is a good yellow self, with a clear yellow edge, and good circular paste.

These are only a few of the really good varieties that have been sorted out from a mass of seedlings. There are, of course, many disappointments, for promising varieties turn out to be inconstant, and the per-centage of really good flowers, from the very best hybridised seeds, is very small; but by patient perseverance on the right lines, anyone may obtain like results to those to be seen at Kirkby Malzeard. There is very greatly enhanced enjoyment to be obtained from the raising of seedlings, and an ample field for the rising generation to carry on the work so well begun long, long ago.—J. Douglas, *Loxford, Ilford.*

THE SEA EAGLE PEACH.

[Plate 538.]

OUR thanks are due to Mr. Stevens, of Trentham Hall Gardens, for the specimens of this fine and little known Peach which are here represented. It was raised by Mr. Rivers, of Sawbridgeworth, from the Early Silver Peach, and was distributed by him some years since, but has not been much heard of in public till within the last year or two, when its great merits seem to have won for it—slowly, but not the less surely—the approbation of practical fruit-growers. Mr. Stevens informs us that the example figured in the accompanying illustration, was but a fair specimen of this grand late-fruiting Peach. "The tree," he adds, "belongs to the large-flowered section, and is of remarkably good habit, being vigorous and sturdy in its growth. It has glossy, deep-green foliage, which is furnished with glands. It is a very hardy variety, and can endure without injury, when in flower, more frost than any other Peach of my acquaintance; and on this account alone, it will be much planted when better known.

"The fruit is very large, and rich in colour both outside and inside. It ripens in our Staffordshire climate from the middle of September to the middle of October; and when, at that season, such good old sorts as Barrington, Walburton Admirable, Late Admirable, Desse Tardive, &c., are light, woolly, and dry, the Sea Eagle will be found heavy, rich, juicy, and piquant in flavour.

"The variety was raised by the late Mr. Thomas Rivers, of Sawbridgeworth, who has left such a distinct mark of his skill and judgment upon both our hardy and tender fruits; and it was distributed by that gentleman some twelve years since or more in his 'Bird Series' of Peaches. In my estimation, it is the best of all late Peaches."—Z. Stevens, *Trentham Gardens.*

NATIONAL AURICULA SHOW.

SOUTHERN SECTION.

THE Exhibition of this branch of the National Auricula Society took place in the garden of the Royal Horticultural Society, at South Kensington, on April 19th; and, considering the unfavourable weather of the past few weeks, may be regarded as a successful one, though the bloom generally was not equal to that of last year. We are glad to notice that the interest which has been excited by the efforts of this Society in the South of England has not decreased, since there were a goodly number of exhibitors, as on former occasions, and a large attendance of visitors, some of which were probably attracted by the fact that the Rev. F. D. Horner—*primus* of Auricula-fanciers: may he live to become Primate!—was to deliver a lecture on these old-fashioned florist favourites. This Lecture will be found *in extenso* at p. 65, and will, we are sure, be read with much interest by a large circle of the admirers of the Auricula.

The following is a list of the awards, and of the varieties exhibited in the several groups:—

Auriculas.

Class A. 12 *dissimilar.*—1st, the Rev. F. D. Horner, Kirkby Malzeard, Ripon, with Lancashire Hero (Lancashire), C. J. Perry (Turner), Erebus (Horner), a grey-edged seedling (Horner), Ringlove (Horner), John Simonite (Walker), Heroine (Horner), Intrepid (Horner), George Lightbody (Headly), Frank Simonite (Simonite), Ajax (Horner), and Snowdrift (Horner). 2nd, Mr. Douglas, gardener to F. Whitbourn, Esq., Loxford Hall, Ilford, with Smiling Beauty (Heap), C. J. Perry, Lancashire Hero; Mabel

(Douglas), a very fine grey-edged seedling; Silvia (Douglas), Pizarro (Campbell); a white-edged seedling; Glory (Taylor), Acme (Reid); and a grey-edged seedling. 3rd, Mr. Benjamin Simonito, Rough Bank, Sheffield, with Mrs. Douglas (Simonite), purple self; Frank Simonite, Ringdove, John Simonite, Pizarro, Mrs. Dodwell (Simonite), white-edged; Anna (Trail), Richard Dean (Simonite), Freedom (Booth), George Lightbody; and a green-edged seedling. 4th, J. T. D. Llewelyn, Esq., Penllegare, Swansea, with Lord of Lorne (Campbell), Imperator (Litton), Grey Friar (Llewelyn), C. J. Perry, Smiling Beauty, Regular (Ashworth), General Neil (Trail), Ensign (Turner); a dark maroon seedling self; Catherina (Summerscales), George Lightbody, and Complete (Sykes).

Class B. 6 *dissimilar.*—1st, the Rev. F. D. Horner, with Frank Simonite, Phantom (Horner), grey-edged; Pizarro, Sapphire (Horner), Lancashire Hero, and Ajax. 2nd, Mr. James Douglas, with Prince of Greens (Trail), Frank Simonite, Lancashire Hero, George Lightbody; a claret-coloured seedling self; and a large white-edged seedling. 3rd, Samuel Barlow, Esq., Stake Hill House, Castleton, with Pizarro, Lovely Ann (Oliver), Samuel Barlow, green-edged; Ringdove (Horner), Frank Simonite; and a green-edged seedling. 4th, Mr. Collier, gardener to R. K. Penson, Esq., Ludlow, with Beauty (Trail), Topsy (Kay), Glory, Robert Trail (Lightbody), Colonel Taylor (Leigh), and Lancashire Hero. 5th, J. T. D. Llewelyn, Esq., with Highland Queen (Horsefield), Meteor Flag (Lightbody), George Lightbody, Lord of Lorne, Acme, and Earl of Errol (Dickson).

Class C. 4 *dissimilar.*—1st, R. K. Penson, Esq., with Colonel Taylor, George Lightbody, True Briton (Hepworth), and Vulcan (Sims). 2nd, Mr. James Douglas, with Colonel Taylor, C. J. Perry, Glory, and George Lightbody. 3rd, Mr. B. Simonite, with John Simonite, Ellen Lancaster (Pohlman), Frank Simonite; and a green-edged seedling. 4th, S. Barlow, Esq., with Alderman C. E. Brown (Headly), Blackbird (Spalding), Beauty, and Anna. 5th, J. T. D. Llewelyn, Esq., with Glory, G. Lightbody, Colonel Taylor, and Garland (Smith).

Class D. 2 *dissimilar.*—1st, Mr. J. Douglas, with Smiling Beauty and Lancashire Hero. 2nd, Mr. B. Simonite, with Frank Simonite and Brilliant, a dark maroon self. 3rd, the Rev. F. D. Horner, with Ringdove and Lancashire Hero. 4th, R. Gorton, Esq., The Woodlands, Gildabrook, Eccles, with Robert Trail and C. J. Perry. 5th, R. K. Penson, Esq., with Topsy and Robert Trail. 6th, Mr. J. E. Hay, Newcastle-on-Tyne, with Beauty, and a seedling green-edged flower.

Class E. Specimen Green-edged.—1st, the Rev. F. D. Horner, with Lancashire Hero. 2nd, R. K. Penson, Esq., with Prince of Greens. 3rd, Sam. Barlow, Esq., with King of Greens. 4th, R. K. Penson, Esq., with Talisman. 5th, R. Gorton, Esq., with a seedling. 6th, Mr. J. Douglas, with Lancashire Hero. 7th, Mr. Douglas, with Colonel Taylor. 8th, the Rev. F. D. Horner, with Lancashire Hero.

Class F. Specimen Grey-edged.—1st, R. K. Penson, Esq., with George Lightbody; Mr. Douglas 2nd, with George Lightbody; 3rd, with Alexander Meiklejohn (Kay); 4th, with Dr. Horner (Reid); 5th, with George Lightbody; 6th, with Alderman C. E. Brown, and 7th, with George Lightbody. 8th, R. K. Penson, Esq., with Confidence (Campbell).

Class G. Specimen White-edged.—Mr. Douglas 1st, 2nd, and 3rd, with Smiling Beauty; 4th, Mr. B. Simonite, with Trail's Beauty; 5th, R. K. Penson, Esq., with True Briton; Mr. Douglas 6th and 7th, with Smiling Beauty, and 8th with Ann Smith (Smith).

Class H. Specimen Self.—1st, R. Gorton, Esq., with Blackbird; 2nd, R. K. Penson, Esq, with Lord of Lorne; 3rd, R. Gorton, Esq., with Blackbird; 4th, S. Barlow, Esq., with Blackbird; 5th, R. Gorton, Esq., with Miss Bainey, a seedling in the way of Vulcan, but smaller in the pip; 6th, Mr. Bolton, with Lord of Lorne; 7th, Mr. B. Simonite, with Pizarro; 8th, Rev. F. D. Horner, with Daphne (Horner).

Class I. 50, *not fewer than* 20 *Varieties.*—1st, Mr. James Douglas, with a capital group, including amongst others Metropolitan (Spalding), Silvia, Dr. Horner, Admiral Napier (Campbell), True Briton, John Waterston (Cunningham), Prince of Wales (Ashton), Lady Sophia Dumaresque, Campbell's Green-edge, Complete, Taylor's Glory, Eliza (Sims), Lady Sale (Smith), Alderman Wisbey (Headly), Maria (Chapman), Ne Plus Ultra (Smith), and a number of seedlings. 2nd, Mr. C. Turner, Slough, with a bright, showy collection, containing several plants of C. J. Perry and Colonel Champneys (Turner); Unique, Topsy, Vulcan (Sims), Pizarro, Lord Clyde (Lightbody), Meta (Turner), Clipper (Turner), Matilda (Dickson), Sultana (Turner), Bessy Bell (Spalding), Peverel of the Peak, John Fowle (Turner), Rupert (Turner), Frank Simonite, fine; and Mary Ann (Fletcher). 3rd, J. T. D. Llewelyn, Esq., with many of the above-named sorts, and Lady Ann Wilbraham (Oliver), Corona, a claret-purple self; Grey Friar (Llewelyn), Ashworth's Regular, Frank Simonite, Meteor Flag, &c.

Seedlings.—New Auriculas were not so numerous as last year, Mr. Horner, unfortunately, not being able to bring up his best seedlings, which were past. The following prizes were awarded, while those to which the letters F.C.C. are added were awarded First-class Certificates:—

Green-edged.—1st, S. Barlow, Esq., with King of Greens (F.C.C.), rather weak in the ground-colour, tube somewhat pale, maroon ground-colour like Champion, pure white paste, and good green edge. 2nd, Rev. F. D. Horner, with Intrepid, a very good flower, with correct yellow tube, paste pure, good black body-colour, and rich green edge; some persons thought this a better flower than King of Greens, but it was not fully open.

Grey-edged.—1st, Mr. J. Douglas, with Mabel (F.C.C.), which also gained Premium as the best Auricula in the exhibition; it is a cross between George Lightbody and Lancashire Hero, and has a neat truss, like George Lightbody, good yellow tube and dense paste, with very smooth even marginal segments. 2nd, Mr. Douglas, with Hilda, a large flower of the George Lightbody type, with the size and quality of a good Alexander Meiklejohn.

White-edged.—1st, Rev. F. D. Horner, with Snowdrift (F.C.C.), a large circular flower, remarkable for its full white edge, black body-colour, dense circular white paste, and yellow tube. 2nd, Mr. Douglas, with Dr. Kidd, a seedling from Smiling Beauty, but smaller, and with a purer edge.

Selfs.—1st, Rev. F. D. Horner, with Erebus (F.C.C.), quite a black-edge flower, medium size, beautiful white centre, and gold tube. 2nd, Mr. Simonite, with Brilliant, a seedling from Duke of Argyll, but a more richly-coloured flower, deep reddish-crimson, with good paste and tube, and beautiful mealed foliage.

Alpine Auriculas.

Class K. 12 *dissimilar.*—1st, Mr. Chas. Turner, with Diadem (Gorton), and Mariner, Mrs. Dodwell, Mrs. Llewelyn, Unique, Mrs. Thomson, Evening Star, Rembrandt, and four seedlings, all of his own raising. 2nd, J. T. D. Llewelyn, Esq., with Dolly Varden (Turner), Evening Star, Unique, Ovid (Gorton), Distinction (Turner), Elcho (Turner), Mrs. Meiklejohn, and five seedlings. 3rd, Mr. James Douglas, with Sensation (Turner), Beatrice (Turner), Mrs. Dodwell, Queen Victoria (Turner), Diadem, Mrs. Llewelyn,

Flora (Douglas), George Lightbody (Turner), Mrs. Meiklejohn, and three seedlings.

Class L. 6 *dissimilar.*—1st, Mr. James Douglas, with George Lightbody, Queen Victoria, Mrs. Llewelyn, and three seedlings. 2nd, Mr. Turner, with Mrs. Thomson, Mariner, Distinction, Sensation, Marginata, and a seedling. 3rd, Mr. E. Adams, Swalwell, Newcastle-on-Tyne, with Col. Scott (Turner), George Lightbody, Diadem, Brilliant (Turner), Mercury (Turner), and Slough Rival (Turner). 4th, J. T. D. Llewelyn, Esq., with Queen Victoria, Diadem, Bronze Queen (Turner), Mercury, Mrs. Meiklejohn, and Mrs. Llewelyn.

Class M. Specimen Gold centre.—Mr. Turner, 1st and 2nd, with Diadem and a seedling, maroon ground with shaded edge. 3rd, Mr. Adams, with Col. Scott. 4th, Mr. Turner, with President (Turner). 5th, Mr. Douglas, with a seedling much in the way of Alexander Meiklejohn, but not so large. 6th, the Rev. E. L. Fellowes, with Diadem.

Class N. Specimen White or Cream centre.—1st, Mr. Douglas, with a seedling. 2nd, Mr. Turner, with Philip Frost. 3rd, Mr. Douglas, with a seedling; 4th and 5th with George Lightbody, and 6th with Selina (Turner).

Seedlings.—*Gold centres.*—1st, Mr. J. Douglas, with Rosamond S. Fellowes, a good dark-shaded edged flower, maroon crimson shading to red. 2nd, Mr. Douglas, with Minnie Coope, purplish-crimson shading to reddish-brown. *White or Cream centres.*—1st, Mr. Charles Turner, with Mrs. Stafford, a good round flower, maroon-purple shading to deep purple. 2nd, Mr. J. Douglas, with Edith Wynne, cream centre, purplish-maroon shading to purple.

Fancy Auriculas.

Class R. 12 *dissimilar.*—1st, S. Barlow, Esq., with a dozen seedlings, all yellow grounds, and white centre. 2nd, Mr. W. Bolton, with a similar group, showing more variation in the ground-colours.

Polyanthuses.

Class O. 6 *dissimilar Gold-laced.*—1st, S. Barlow, Esq., with John Bright, Harbinger, Sunrise, Criterion, Firefly, and a seedling, all of his own raising. 2nd, Mr. James Douglas, with George IV. (Buck); Rev. F. D. Horner (Jackson), Exile (Crownshaw), Cheshire Favourite (Saunders), Lancer (Bullock), and President (Hilton). 3rd, Mr. W. Bolton, with Cheshire Favourite, President, Exile, Earl of Lincoln (Cox), and two seedlings.

Class P. 3 *dissimilar.*—1st, Mr. Douglas, with Lancer, Cheshire Favourite, and George IV. 2nd, Mr. W. Bolton, with Cheshire Favourite, George IV., and Lancashire Hero (Whittaker). 3rd, S. Barlow, Esq., with President, Firefly, and John Bright.

Class Q. Specimen Gold-laced.—1st, Mr. Douglas, with Exile. 2nd, S. Barlow, Esq., with John Bright. 3rd, Mr. W. Caudwell, Wantage, with George IV. 4th, J. T. D. Llewelyn, Esq., with Lancashire Hero (Whittaker). 5th, S. Barlow, Esq., with Sunrise; and 6th, with Lancashire Hero (Yates).

Class S. 12 *dissimilar Fancy.*—1st, Mr. R. Dean, Ranelagh Road, Ealing, with a very bright lot, varying in colour from white to buff, yellow, primrose, mauve, violet, rose, crimson, and maroon. 2nd, Mr. F. Hooper, Bath; and 3rd, Mr. Douglas.

Class T. 12 *dissimilar Double and Single Primroses.*—1st, Mr. R. Dean. 2nd, Mr. H. Hooper, Bath.

Class U. 12 *Hardy Primulas.*—1st, Mr. Douglas, with well-flowered representatives of P. cortusoides, P. Munroi, P. intermedia, P. marginata, P. rosea, P. sikkimensis, &c. 2nd, J. T. D. Llewelyn, Esq. 3rd, S. Barlow, Esq.

Seedlings.—*Black ground.*—There was a grand set of seedling Polyanthuses from S. Barlow, Esq., who gained 1st prize with Criterion (F.C.C.), perhaps the best Polyanthus yet raised, the centre round, deep yellow colour, rich deep maroon lacing, very correct; and 2nd, with John Bright (F.C.C.), which, although a grand flower, lacks a point in its angular centre and unsymmetrical lacing. The Certificates were both of them well deserved. *Red ground.*—1st, S. Barlow, Esq., with Firefly, which, though not of such good quality as Sunrise, is distinct, with deep yellow centre, and correct lacing. 2nd, Mr. W. Bolton, with Regular, a small neat flower, of good quality, round centre, and correct lacing.

Mr. R. Dean received a First-class Certificate for Fancy Polyanthus Grenadier, a brilliant red flower, with yellow centre; very showy.

The Premier Auricula in the Show was a seedling grey-edged flower, named Mabel, exhibited by Mr. J. Douglas.—W.

Guilielma speciosa.

THE PEACH PALM.

In the account of this picturesque and elegant palm, given by Mr. Wallace, in his *Palm Trees of the Amazon*, it is stated: that its stem is slender, cylindrical, and thickly set with rings of long, needle-shaped spines; that it reaches a height of 60 ft., growing erect; and that it is furnished with numerous terminal pinnate drooping leaves, the leaflets of which, growing out from the midrib in various directions, and being themselves curled or waved, give the whole mass of foliage a singularly plumy appearance. The leaves of young plants are entire, but as the trees acquire age, they break up into regular narrow leaflets.

This palm, which is the *Guilielma speciosa* of Martius, and the Puparika and Pirijao of the natives, bears a reddish-yellow fruit, about the size of an apricot. This fruit, in many instances, is a farinaceous mass, the seed being abortive; but when the fruits contain the normal stony seed, they are nearly double the size

above named. In the Amazon district the tree is always planted near the houses of the Indians, whom it supplies with abundance of wholesome food, being almost as much esteemed as the cocoa-nut is in the East. The fruit is, however, difficult to obtain, in consequence of the spines of the stems, which prevent climbing; the Indians, therefore, construct rough stages or rude ladders, by which means they mount high enough to pull down the bunches of fruit with hooked poles. They are eaten either boiled or roasted, the flavour being something like that of Spanish chestnuts, only oily; they are also ground and made into cakes, which are roasted like cassava bread. When fermented in water, the meal forms a subacid creamy liquid. The wood of the trunk is black and exceedingly hard and durable, while the sharp needle-like spines are used by some of the tribes for the purpose of tattooing their bodies. The species is said to be indigenous to the countries near the Andes, but is much cultivated in the regions of the Amazon and Orinoco. It has long been an inmate of our hothouses, where it is conspicuous for its elegance.—M.

STRAWBERRY LA GROSSE SUCRÉE.

WE find the above-named Strawberry the best variety we grow for early crops, and we have now grown it for several years, alongside Vicomtesse Héricart du Thury and Keens' Seedling, both of which are reputedly good early strawberries. With us, *La Grosse Sucrée* ripens about a week earlier than either of these sorts, when grown in the same house and under the same treatment. It does not show so many bloom-trusses as the other sorts named, but it always has enough for a crop, and they usually set and swell off well. In fact, we find it to set better in dull weather early in the season than any other variety we have ever grown. The fruit is of a splendid crimson colour, fine size, and good flavour. Some of the fruits picked the third week in March this year weighed nearly an ounce each. We grow about 200 plants each year, out of a total of 1,400, just for early work, following up with larger batches of *Keens' Seedling* and *Vicomtesse Héricart du Thury*, these three being our main forcing Strawberries.—H. J. Clayton, *Grimston*.

VINES AND VINE CULTURE.

Chap. XVIII.—The Varieties of Grapes.

(Continued.)

THE descriptions of the varieties of Grapes included in our Synoptical Table are here continued, from page 41 (1881).

Grizzly Frontignan (71).—A round red or tawny Muscat Grape. *Synonyms:* Muscat Gris, Muscat Rouge; Red Frontignan.

Vine.—Growth moderately strong and free. Ripening freely, and usually very fruitful. *Leaves* medium-sized, deeply toothed, dying off yellow.

Fruit.—Bunches medium-sized, rather long, somewhat cylindrical in shape, but occasionally shouldered, generally well set. *Berries* below medium size, round. *Skin* thin, membraneous, of a dull red or tawny colour on the side most exposed, and paler on the shaded side, generally covered with a thin bloom. *Flesh* very firm, with a very rich, pleasant, and decided musky flavour. When kept hanging on the vine after being ripe, they are very apt to shrivel, but are then exceedingly rich and excellent to eat.

History, &c.—This is one of the very oldest of our English Grapes, and was formerly cultivated in every collection, but is now seldom to be met with.

Cultural Notes.—The great fault of this Grape has always been felt to be its tendency to shank. It grows freely, fruits and sets freely, and promises well till it approaches ripeness, when it almost invariably shanks badly. Requires a warm vinery to ripen thoroughly well.

Season.—Mid-season.

Merits.—First-rate in quality, but rather small, and so uncertain as to be scarcely worthy of cultivation.

Gromier du Cantal (39).—A round red or tawny Sweetwater Grape.

Vine.—Growth very robust and strong; shoots gross, but ripening moderately well; moderately fruitful. *Leaves* very large, deeply toothed, dying off yellow.

Fruit.—Bunches large, very broadly shouldered, moderately well set; stalks thick, fleshy. *Berries* large, round, or nearly so, on very stout, fleshy stalks. *Skin* thin, pale greenish-yellow on the shaded side, and splashed and dotted with dull red and brown, with occasional splashes of pink on the exposed sides. *Flesh* thin, very juicy, with a pleasant Sweetwater flavour.

History, &c.—About twenty years ago this grape was grown in the Horticultural Society's Gardens, Chiswick, and at Trentham, about the same period, but it is not now to be met with at either place, so far as I am aware. It has somehow become confused with De Candolle, from which, however, it is quite distinct, being twice as large in berry, but not producing nearly so large a bunch.

Cultural Notes.—Will succeed in any house suitable for Black Hamburgh. It is somewhat apt to shank, so much so that the bunch is frequently reduced to a mere skeleton.

Season.—Early.

Merits.—A very distinct and typical grape, but scarcely worth cultivating.

Gros Colman (84).—A round, black Vinous Grape. *Synonym:* Gros Colmar.

Vine.—Growth very robust and strong, the shoots stout, with large prominent buds; very fruitful. Leaves large, broad, very downy, often presenting the appearance of flagging, and very early in the

season assuming a rusty appearance, from which they change to a dull reddish hue.

Fruit.—Bunch medium-sized, varying from 1 lb. to 3 lb. or sometimes 4 lb. in weight, rather short and broad, with usually one large shoulder, giving the bunch a one-sided appearance; sets very freely; stalk long, thin, but very tough and strong. *Berry* round, very large, some examples measuring 4 inches in circumference. *Skin* thick, tough, adhering to the flesh, jet-black, with a thick coating of bloom. *Flesh* firm, coarse, and generally with a very poor and indifferent flavour; but when very highly ripened and commencing to shrivel, it is sweet and pleasant.

History, &c.—There is some doubt as to the origin of this grape. The earliest record of it in this country is in the hands of Mr. Rivers, who received it from Leroy of Angers. Subsequently, Mr. Standish grew it at Ascot, and exhibited it at South Kensington about 1861 or 1862, where it attracted some notice, from its very handsome appearance; but it was some years later before it attained the great popularity it now enjoys, a great measure of which is due to Mr. W. Thomson, who was the first to recommend it, and to grow it extensively for market purposes. As to the name: Gros Colman is that given in *Leroy's Catalogue* in 1860. Dr. Hogg states, in the *Journal of Horticulture*, December, 1878, that "in the Catalogue of Jacquermet-Bonnefont of Annonay, for 1858, it is mentioned by the name of Gros Colmar. In that of De Bavay for 1852, it is called Gros Colman. It can be traced through Germany, where it has been for many years known as Gros Kölner, and it is of this name that the French Gros Colman and Gros Colmar are corruptions."

Cultural Notes, &c.—Free in growth and fruitful, this is one of the easiest of Grapes to cultivate, and to have in a very presentable condition by ordinary treatment; but to secure good quality it requires a long time to ripen, and a considerable amount of heat, in fact, almost similar treatment to that required for Muscats. The enormous weight of the berries, &c., necessitates some care in not overcropping—an error of treatment which is soon apparent in the want of colour.

Season.—Late, but does not keep very well long after Christmas.

Merits.—Very handsome in appearance, and valuable on that account for market purposes. Second-rate as to quality.

Gros Guillaume (85).—A round, black, Vinous Grape. *Synonyms:* Barbarossa, Pennington Hall Hamburgh, Seacliffe Black, &c.

Vine.—Growth very strong and vigorous, attaining to a great size quickly; rather uncertain as to fruiting, some plants showing abundantly, others scarcely at all. *Leaves* large, dying off very early, of a reddish colour.

Fruit.—Bunches enormously large, 2 ft. and upwards in length, and fully more across the shoulders, and weighing from 5 lb. to 10 lb. or even 20 lb. each; shoulders broad; very regularly tapering in form, and compact; very free-setting. *Berries* medium-sized, round, or slightly ovate at times. *Skin* membraneous, of a deep black colour, with a fine bloom. *Flesh* tender, or moderately so, juicy, but possessing little flavour, excepting when highly ripened.

History, &c.—The better known designation of this Grape is that of Barbarossa, under which name it is to be found in nearly every collection, but according to the best authorities, this is incorrect, the true Barbarossa, it is stated, being—as its name would imply—a red or grizzly-coloured Grape. Although the true Barbarossa is mentioned in Hogg's *Fruit Manual*, I have never met with it in cultivation. The Gros Guillaume was first prominently brought under notice by Messrs. Butcher, of Stratford-on-Avon, a little more than twenty-five years ago. It is now in general cultivation, and has several times appeared under new names, and reputed new and improved varieties have been submitted.

Cultural Notes.—In regard to fruiting, this is one of the most uncertain of grapes, and much has from time to time been written on the subject. Sometimes only a few, frequently only one bunch, is produced by a large vine, and this is generally a very large one. In other cases, some vines will regularly produce bunches as freely as the Black Hamburgh. In the large conservatory at Chiswick, it fruits with remarkable freedom at all times. It succeeds best treated on the long-rod system. Some remarkably fine examples of this grape have been produced by grafting on the Black Hamburgh. The largest have been those grown by Mr. Roberts, gardener at Charleville, Ireland, one exhibited in 1877 weighing 23 lb. 5 oz. It is best suited for a late grape, but to ripen it thoroughly well, so as to have it of good quality, it should receive nearly as much heat as the Muscats.

Season.—Late, from Christmas to March.

Merits.—Very handsome in appearance on account of the size of bunch; second quality, excepting highly ripened.

—A. F. Barron.

SALT FOR ASPARAGUS.

WRITERS on the culture of Asparagus have always, I believe, without exception, advised using salt as a stimulant. French cultivators, as a rule, never use it. I have seen the largest and finest in France ever grown, and salt was never used in any form or at any time in its cultivation. The question then is,—Why should we use it in this country? I maintain that it is a useless expense, and perfectly unnecessary, and in many cases it is used to such an extent as to be positively injurious—like other manures, frequently overdone. I do not raise this question simply for controversy, but to ascertain why it is used, or whether it is necessary for the full development of Asparagus in this country, or in any soil. I know gardens near the sea, within 500 yards of it, where it will and does not thrive half so well as it does with me twenty miles inland, and I don't use a particle of salt. I once used it for the sake of experiment, but I was so dissatisfied with it, that I decided never to use it again. Last year I top-dressed our Asparagus quarter with ashes mixed with soil,—sifted, of course; but it must be remembered these ashes are very different to ashes from English coal, and as there is coal and coal, so there are ashes and ashes. Now that Asparagus culture is being attended to more, and when, as is the case, it is becoming a favourite vegetable with most people, the question of least cost in its production is an important one, and I shall be very much obliged to any one if they will tell me how to grow better Asparagus with salt than without it.—H. K., *Floors.*

SUBURBAN GARDENING.

MAY.—"Will the Spring weather ever come?" is the almost despairing cry of Gardeners, as we write. Biting east winds prevail almost constantly, and gardening operations are greatly behind, because the soil is so unworkable. Gardeners had longed and hoped for a genial April, with warm showers and kindly growing weather, but it has not come, and the fear is that May will be like to April, as has happened before. Meanwhile, many gardening operations are in a kind of suspense, waiting for the change that tarrieth long in coming.

Kitchen Garden.—It is in May that the crops of *Brussels Sprouts, Savoys, Cauliflowers*, and *Autumn Broccolis* should be got in. The value of getting these out early, much earlier than is generally the case, cannot be over-estimated. *Scarlet Runners* and *French Beans* should be got in, despite the drying winds. The gardener must live in hope that Nature will be kind, and give him a happy plenteousness of crop. As opportunity offers, *Lettuces* should be planted out, but only in moist weather, to give the young plants a start. *Radishes*, and especially the Turnip varieties, should be sown for successional crops, watering the seed-beds when dry weather prevails, and protecting from the ravages of birds. Seeds of *Vegetable Marrows* can now be sown, but it will not be safe to plant out till quite the second week in June. As soon as the plants of *Onions*, *Carrots*, *Parsnips*, *Beet*, &c., are large enough in the seed-beds, they should be thinned out, and the beds kept clear of weeds. The hoe should be in constant requisition, to keep weeds down; when the long-wished-for genial weather comes they will grow with amazing rapidity, and destructive garden insects will work havoc among the young crops, unless restrained. May is one of the busiest of months in the Kitchen Garden.

Fruit Garden.—"How slowly the blossom of the *Fruit Trees* expands!" is the universal remark. There is little else to be done but to watch and wait. Newly-planted trees should be mulched on the surface of the soil, and watered a little to keep the roots active. In May the operation of disbudding Wall Trees is generally performed. In disbudding *Peaches* and *Nectarines*, it is necessary to remove every shoot which is not required for the following year's fruiting. *Apricots* and *Plums*, on the contrary, as they bear fruit as short spurs, only require to be deprived of their foreright, gross-growing shoots, leaving the rest to go on till they become somewhat firm, when they should be shortened to about an inch from the main stem, taking care, of course, to retain a sufficient number of young shoots to fill up vacancies and increase the size of the trees. It is very necessary at this stage to keep the trees free from insects, syringing at times, and applying an insecticide. Mildew on Peach-trees can be treated by syringing with water in which Gishurst Compound is mixed, at the rate of two ounces to the gallon.

Flower Garden.—All *Bedding Plants* of a tender character need to be thoroughly well hardened before planting-out. It is said the cold east winds are to last right into June; hence the greater necessity for taking precautions to have the bedding plants fitted to bear exposure. Those who fill their beds with spring flowers will now have them fully gay, indeed so late in the season, that spring gardening will last through June in perfection. In filling the flower beds, all thoroughly hardy plants should be put out first, the half-hardy plants not till the end of May, and the tender plants the second week in June. *Asters*, *Stocks*, *Phlox Drummondii*, *Zinnias*, *Helichrysums*, *Marigolds*, &c., should be grown on into size, so as to have them as strong as possible to go out at the end of May. *Dahlias* should not go out till the second week in June, but by potting them on they can be had in good size for planting out when the weather is suitable. In the mixed border, many things will be coming on into flower, or throwing up blooming shoots, and stakes will be needed. The grass-plat should be kept well swept and rolled, and the margins of shrubberies neat and close. When warm rains come—and let us hope that will happen before this appears in print—a time of great activity will have arrived, for it is then are laid the foundations of the floral display that when successful affords so much satisfaction during summer.

Cold Frames.—These are now most useful for hardening-off bedding plants, and for stowing away many things that have done blooming, and are coming in for service in the greenhouse. *Auriculas*, *Polyanthuses*, and all hardy *Primulas* in pots, as they go out of flower, should be placed here, till such time as they can be repotted or planted out in the open ground, but they must not be neglected. Water must be given, and the plants kept clean, the surface-soil being occasionally stirred. Plenty of air should be given.

Greenhouse.—The *Dielytra*, *Primula denticulata*, and *Myosotis dissitiflora* are three subjects the amateur should make a note of to cultivate for greenhouse decoration during April and May. Add to these *Hoteia japonica*, *Primula Sieboldii*, *Deutzia gracilis*, and *Cinerarias*, and his greenhouse can be made very gay and agreeable. To follow these there are *Fuchsias*, *Zonal Pelargoniums*, *Liliums*, *Petunias*, both double and single, *Balsams*, &c., all of which he can produce himself, and grow them on to flower. Our cold house, that was denuded of two-thirds of its ordinary winter occupants by

reason of the severe frost, has been kept very gay with a number of *Alpine Auriculas*, that have bloomed with great freedom, and pleased us vastly. There is no longer a deficiency of subjects, and the main thing is to keep all growing free and healthy for service during the summer. Some seeds of *Primula sinensis fimbriata* should be sown now, for blooming in the autumn and winter, for it is at that season of the year that the plants, helped with a little heat, flower finely and in their best colours. Amateur gardeners with cold greenhouses have been taught one useful lesson by the past winter—that is, to depend more and more on hardy plants, and less on tender ones for their spring display, and it is at this season and during the summer that suitable subjects should be gathered together. *Chrysanthemums* for autumn flowering in pots now need a good deal of attention, to keep them from becoming drawn, or suffering for want of water. The greenhouse should not be opened for air on the side towards the cold, cutting, easterly winds; and as the nights are cold, followed often by sharp frosts, watering should be done early in the forenoon, so that any spilled on the floor can be dried up before night. Plenty of air and shading must be given by day. A fumigation with tobacco-smoke will be found of great service, as in cold weather the house has to be kept somewhat close, and then green-fly multiply.—SUBURBANUS.

GARDEN GOSSIP.

THE magnificent COLLECTION OF ORCHIDS FORMED by JOHN DAY, Esq., of Tottenham, is, we regret to say, being distributed by the hammer. Some idea of the value of the collection may be formed by the proceeds of the first two sales, each of two days' duration. On the first occasion, March 31st, the total amount realised was £1,847 7s. The highest price given for one lot was 140 guineas, the bid of Sir TREVOR LAWRENCE, Bart., M.P., for *Cypripedium Stonei*, var. *platytænium*, a very strong plant, with one old growth showing flower, and two strong young leads of five leaves each! On the next occasion, April 12th, the amount realised was £1,803 7s. 6d., and amongst the highest prices realised were the following:—*Cattleya exoniensis*, 48 guineas; *Phalænopsis intermedia*, 62 guineas; and *Dendrobrium Schröderi*, 66 guineas. Other sales are to follow until the whole collection is disposed of.

— THE Crystal Palace Company are about to establish a SCHOOL OF GARDENING in connection with their educational department. The School is to comprise two main divisions—1, Landscape Gardening, under the direction of Mr. MILNER; 2, Practical Gardening and Floriculture, under Mr. W. G. HEAD. We have, remarks the *Gardeners' Chronicle*, so long and so strenuously advocated the establishment of a school of horticulture comparable with those in Belgium and Germany, that we can but rejoice to see the idea not only again broached, but likely to assume a practical shape. In the first division the Crystal Palace offers exceptional facilities for instruction, but as to the practical management of the various departments of a large or complete garden establishment, the Palace at present supplies but few of the requirements. Nevertheless, these might be supplied, or arrangements might be made whereby pupils thoroughly grounded in the principles at the Palace school, might afterwards pass some time in various public and private establishments, to acquire that practical knowledge of details which could not be obtained in the Palace itself. The success of the scheme depends in great measure on the zeal and capabilities of the teachers; but given these, there is no reason why it should not be made a success, and thus a want will be supplied, and a reproach removed.

— MESSRS. VEITCH and SONS' display of HYACINTHS at South Kensington on March 22nd was of a very high order of merit; every spike was worthy of being placed in a first-prize collection; one spike measured 8 in. in length and 13 in. in circumference. The best of the new varieties were Czar Alexander, a single deep purple-blue, with a massive spike of closely-placed bells of large size; and Primrose Perfection, a distinct and good variety, with the largest and best formed bells of any yellow Hyacinth in cultivation. Beatrice, single pale rose, in the way of Grandeur à Merveille, has a more compact spike than that variety, but is not so clear in colour. The double varieties were represented by Masterpiece, a very distinct pale blue, with large, well-formed bells, and which will prove one of the best of double-blue Hyacinths, if it produces a longer spike. The best varieties of recent years were to be found amongst the single reds; these were Prince Albert Victor, crimson, with well-shaped bells and a good spike; Vuurbaak, bright fiery red, very good; Linnæus, a distinct deep carmine; Garibaldi, rich dark crimson; Lady Palmerston, rosy-pink; La Joyeuse, pale rose-pink; Princess Helena, soft rose and a long spike; Etna and Von Schiller. The semi-double Koh-i-noor is also very fine in this colour. Amongst the single whites La Grandesse, by reason of its large pure white bells and long spike, is the best; and Mont Blanc stands next; but Baroness Van Tuyll, L'Innocence, Snowball, and La Française were also very fine. Of single blues there were grand spikes of King of the Blues, the best and most constant Hyacinth in any colour; Marie, a dark blue, and very good this year; John Bright, new and good; Grand Lilas, a fine old variety, in remarkably good form; Cavaignac, pale porcelain-blue, with very smooth large bells; Grand Bleu, brighter than Grand Lilas, though much like it in formation; Czar Peter and Lord Derby, both fine pale-blue varieties; The Sultan and Duke of Connaught, rich purple-blue. The collection received the award of the Gold Medal of the Society.

— MR. BULL has recently had a very interesting collection of SARRACENIAS IN BLOSSOM, a state in which one seldom sees them, as they are more frequently grown for the sake of their pitchers; they are, nevertheless, exceedingly beautiful, and full of interest. We may mention that there were plants of S. Drummondii—the Drummondii of gardens—growing in 12-in. pots, which had from 10 to 13 of the large quaintly-formed maroon-crimson blossoms, on scapes about a couple of feet in height, and slightly overtopping the handsomely reticulated pitchers. Other sorts in effective bloom were the large yellow S. flava picta, the white S. crispata, and the deep blood-red S. rubra. It is interesting to note the varied odour of the different

sorts. We did not detect any peculiar smell in S. Drummondii, nor in S. crispata; but S. flava had the characteristic ungrateful odour attributed to it, and which was in this case strongly feline. On the other hand, the blossoms of S. rubra have the fragrance of Violets very strongly developed.

— IN the EPITOME OF GARDENING (A. and C. Black), we have a reprint, with additions, of the article "Horticulture," written for the *Encyclopædia Britannica*, the section on the Science of Horticulture by Dr. M. T. Masters, and that on the Practice of Horticulture by Mr. T. Moore. The object of the original article, which was not intended for separate issue, but has been reprinted on the suggestion of some of its readers, was to give a sketch of the whole subject as complete as the space to be occupied would permit. This necessarily involved brevity, and hence the little volume has been styled an Epitome. In this separate form, it will, we believe, be a useful manual for amateurs and others to whom a handbook is more acceptable than a bulky volume. The subject is set forth in such a manner as to supply all that is wanted by many readers, and to lead on in the case of others to the consultation of more extended treatises on the general subject of special books on special subjects. The larger or more practical section of the work is divided into chapters on Garden formation and preparation, Garden structures, Garden materials and appliances, Garden operations, Flowers, Fruits, Vegetables, and Calendarial Instructions. Our personal share in its production precludes us from recommending it beyond pointing out its extent and intent.

— MR. RILEY, in the *American Naturalist*, thus gives the life-history of the VINE-LOUSE, *Phylloxera vastatrix*:—"Starting from a stem-mother, it multiplies agamically through an indefinite number of generations, either in galls on the leaf, or in cavities, or on swellings on the roots. Its spread is naturally slow in the unwinged condition, whether on the surface or beneath the ground. But winged, agamic females are produced during the late summer and autumn months, and these are the true migrants of the species, and disperse and spread from vineyard to vineyard through the atmosphere. They lay some half-dozen eggs only, in such situations as afford shade and moisture, and from these come the only true males and females, which are mouthless, feed not, and are born simply to procreate, the female laying, either below or above ground, a single, and the only directly impregnated egg, which has been termed the winter egg, and which in the spring following gives birth to the stem-mother, which may either found a colony in a gall on the leaf, or upon the root—the latter being the more common habit."

— MR. JENKINS, writing in the *Gardeners' Chronicle*, recommends SCILLA CAMPANULATA ALBA MAXIMA, an enlarged form of the common white Squill, as being well adapted for forcing in pots for early spring work. It is of pearly whiteness, and its spikes somewhat resemble, when in flower, the early white Roman Hyacinth, and might with advantage be used as a substitute for it, the single bells being most useful, if wired, for small button-hole bouquets. It should be grown in pots constantly, as it will then force hard. Those who may wish to try this, may adopt the following plan:—Lift and select the largest bulbs as soon as they are matured, which will be about July, and pot the larger bulbs, say, six in a large 60-sized pot, and eight to ten in a 48-sized pot, according to the size of the bulbs; when potted, they should be plunged in ashes or similar material, and introduced into warmth about Christmas, or even earlier, and brought on gradually.

— THE rare and pretty COLCHICUM LUTEUM has been flowering in the collection at Kew, and its hardiness seems sufficiently demonstrated, inasmuch as the plants have not been protected in any way during the exceptionally severe weather of the past winter. The flowers are of a bright yellow, and about the size of those of Bulbocodium vernum. It is a native of Afghanistan and some of the surrounding countries.

— THE Hardiness of CHAMÆPEUCE DIACANTHA has been well attested by some of the correspondents of the weekly papers. At Tunbridge, in Kent, five plants stood out through the winter of 1879-80 in an open flower-bed on the lawn without any protection, and seemed to be as hardy as a Scotch Thistle. At Shiffnal, in Shropshire, it flowered and seeded after standing out unprotected the whole winter of 1879-80. At Winchmore Hill, it has stood out for the last three winters, and those that stood out during the winter of 1879-80 flowered last summer and ripened seed.

— FEW stove climbers are more graceful and more charming than the Brazilian SOLANUM VENUSTUM, when it is allowed free development. At Kew it is trained to the rafter of a house, so that its large pendulous panicles of handsome lavender-blue flowers exhibit themselves in all their native grace. It is one of the loveliest of the climbers which has been blooming during the past spring in the Palm-house.

— THE elegant Palm LEOPOLDINIA PULCHRA, known also as *Cocos Weddelliana*, evidently does not require so much warmth to keep it in health as is generally supposed. At Oakley, Fallowfield, a couple of handsome specimens, some 5 ft. or 6 ft. high, grown in pots, are reported to have stood in the rockery of a fernhouse, where the night temperature through the winter has been from 40° to 50°, and the plants have not apparently suffered in the least, being of a fine dark-green colour, equal to those usually met with in much warmer houses.

— FEW subjects can vie with the Himalayan PRIMULA ROSEA in simple beauty and brilliancy of colour. The flowers at first are a clear bright rose-carmine, but later on they gradually become paler, with a shade of purple. Dr. Aitchison states that high up in its native Afghan mountains, where it is found in flower from June to August, the species affects boggy spongy places, like those in which our Bird's-eye Primrose is generally found. In winter, it is protected by a thick covering of snow.

— MESSRS. JACKMAN'S CLEMATIS SHOW is to be held this year at the Alexandra Palace. The plants are in excellent trim, and give promise of a very fine bloom. The exhibition will take place during the present month.

— M. ED. PYNAERT VAN GEERT has been named a Chevalier of the Order of Leopold—a well-deserved public recognition of merit.

W.H. Fitch del.

P. De Pannemaeker, Chromolith. (Gand)

Rhododendron J. Marshall Brooks.

RHODODENDRON JAMES MARSHALL BROOKS.

[Plate 539.]

THE variety of Rhododendron figured in the accompanying plate is one amongst many fine-leaved magnificent-flowered sorts which have been originated at the Knap Hill Nursery. We are indebted to Mr. Anthony Waterer for the truss figured by Mr. Fitch, and which bears its own recommendation. We have on previous occasions described it as a grand flower, of a rich and lively crimson, having a large pallid blotch, covered with bronzy or yellowish-green spots, on the upper segment; this peculiar marking renders the clusters peculiarly telling and effective, and gives a distinctness of character which is most desirable. When to these splendidly-coloured flowers, produced in magnificent trusses, we add the bold and ample foliage which characterises the Knap Hill race of hardy Rhododendron, we have an ornamental evergreen flowering shrub which may challenge precedence with any other in existence.

We have frequently taken occasion to explain that many of the fine-flowered Rhododendrons we sometimes see and always admire, are on account of their parentage, too tender to bear our severer winters uninjured, since the very severe frosts, if they do not altogether destroy the trees, inflict real damage on the young flowers in the bud so that the truss of bloom is either totally wrecked, or opens in a patchy and imperfect manner. In other cases, also the result of parentage, handsome flowers are associated with mean and shabby foliage, which in some cases has the awkward habit of falling away early, leaving the plants bare and scraggy, when they should be well clothed with leaves in every part.

Now, the Rhododendron being an ornamental evergreen as well as an ornamental flowering shrub, it is a matter of supreme importance that only those sorts should be planted which, on account of their bold and durable foliage, will be really ornamental during the long period in which the flowers are absent, and which, at the same time, have flowers of good quality, and a constitution derived from hardy parents enabling them to withstand the vicissitudes of our climate. There are, of course, sheltered spots, in the South and West of England, for example, where the better of the comparatively tender sorts alluded to may be successfully flowered in all but the winters of exceptional severity, and where, in consequence of the more genial climatal conditions, the foliage puts on a better aspect. The fact still remains that over the length and breadth of the land, where these favourable conditions do not exist, there are certain kinds which manifest all the faults above referred to, and which, in the severer of ordinary winters, have their flowers more or less destroyed; and there are other sorts which are to be regarded as good evergreens at all seasons, and which rarely, if ever, sustain any injury to their blossom-buds during the severest of winters.

The winters of 1879-80 and 1880-1 have been most trying for Rhododendrons, as well as for all outdoor shrubs. We have, therefore, as we have fallen in with them, noted such of the finer sorts as had stood these severe trials unharmed, and, in consequence, those mentioned below can be recommended as thoroughly reliable on the score of hardiness, while for beauty of foliage and flowers they cannot be excelled:—

Agamemnon.—A fine claret-red, with a white centre.

Album grandiflorum.—An old but pleasing blush-white variety.

Alexander Dancer.—A grand sort, having fine, bold flower-trusses and good foliage, the flowers bright rose, with a magenta flush, and bearing a small white blotch, dotted with black.

Archimedes.—A handsome light rose, with paler centre.

Barclayanum.—A fine old sort, raised some forty years ago, and bearing fine trusses of deep, rosy-crimson flowers.

Caractacus.—A strikingly handsomo sort, the flowers deep purplish magenta, with blotch of black dots.

Charles Fisher.—A rich crimson-rose, well spotted, and a fine trusser, every way first-class.

Delicatum.—One of the best of the whites, having good foliage, and large white flowers, marked on the upper segment with a large trifid blotch of greenish spots.

Everestianum.—One of the older varieties, but still indispensable in all good collections; its warm lilac tint, its conspicuous greenish spotting, and its prettily frilled margin, all combine to attract attention to its pleasing character, besides which, it is of excellent habit, has fine, healthy foliage, and is a most constant and abundant bloomer.

Fastuosum flore-pleno.—A good grower, of Continental origin, a double-flowered mauve-lilac, the best of the double sorts, and one which may be planted with confidence.

Helen Waterer.—A very attractive and thoroughly good variety, remarkable for its bold foliation, and its fine trusses of white-centred flowers, having a deep scarlet-crimson edge; a decided

improvement on the older and long-favoured Alarm, which is superseded by it.

HENRY WINTHROP SARGENT.—A very fine variety, producing grand trusses of flowers, of a splendid crimson-rose, bold in truss and in foliage, and one of the most telling varieties grown.

JAMES MARSHALL BROOKS.—The fine variety now figured, having flowers of a rich crimson, thickly dotted with bronzy-green spots on the upper segment; the trusses magnificent.

KETTLEDRUM.—One of the hardiest amongst the hardy, a rich deep purplish-tinted rose, which stands out everywhere striking and effective.

LADY ARMSTRONG.—One of the most fascinating sorts, bearing immense compact conical trusses of large flowers, the colour of which is a light but sparkling brilliant rose, with a light blotch marked with small black spots, very distinct and beautiful.

LADY CLERMONT.—A very superior variety, producing fine trusses of deep rosy-crimson flowers, with a conspicuous dark blotch.

LADY GREY EGERTON.—Remarkable for its immense compact trusses of blush-coloured flowers, which are of the largest size.

LUCRETIA.—A noble variety, with fine foliage and bold flower-trusses; the blossoms are pale in the centre, with a margin of magenta-rose, and marked with bronzy-yellowish spots on the upper segment.

MICHAEL WATERER.—One of the good old sorts, always conspicuous from its finely shaped, rich crimson, slightly spotted flowers.

MRS. JOHN CLUTTON.—The most beautiful hardy white Rhododendron in cultivation, remaining longer in bloom than any other variety; it is of a hardy vigorous character, though less bold in the foliage than some other kinds.

MRS. F. HANKEY.—A splendid variety of recent acquisition, which has broad bold foliage, and large compact trusses of flowers of a deep rosy-pink, somewhat paler in the centre, and having a conspicuous blotch of black spots on the upper segment. It is a beautiful variety, and a very decided advance on Lady Eleanor Cathcart, and some two or three shades deeper in colour.

MRS. G. W. HENEAGE. — A fine variety, with flowers of purplish-rose colour, having a light centre; distinct in character.

MRS. R. S. HOLFORD.—A grand sort, with fine leaf and bold trusses, of very bright, distiuct, salmony-scarlet flowers, having a dotted blotch of medium density.

MRS. H. INGERSOLL.—A distinct sort, of fine habit, with splendid foliage and bright rosy-scarlet flowers, having a well-marked blotch of bronzy-green spots, which renders it very attractive.

MRS. MILNER.—A fine sort, remarkable for its bright, rich, rosy-crimson colour.

MRS. JOSEPH SHUTTLEWORTH.—A most excellent hardy sort, forming a good bush, and an equally good standard, and bearing compact trusses of finely-shaped flowers, which are of a rich rosy crimson, with a white blotch on the upper segment, the blotch being almost covered by black spots; the effect of this dash of white in lighting up the centre of the flower is marvellous.

OLD PORT.—A rich plum-purple, indispensable, both for its merit as a flower, its hardiness as a shrub, and its distinctness of character.

PURITY.—A very telling variety, one of the best whites, with a faint blotch of yellowish spots on the upper segment.

ROSEUM ELEGANS.—One of the earliest varieties of this race. Its fine foliage and somewhat drooping habit render it exceedingly ornamental, while the flowers, if not possessing the large size and the rich spotting of more recent kinds, are at least bright and cheerful in hue, and abundantly profuse. In growth it is a model of what a standard Rhododendron should be, having a sufficiently sturdy stem, a dense well-balanced head, with a somewhat dependent habit in the branches, and abundant clusters of warm, rosy-lilac flowers. It is always telling on account of its excellent habit.

SAPPHO.—A grand and striking variety, large and bold in the flower and truss, the colour a clear white, with a large blotch on the upper segment, so dark as to appear black by contrast; nothing can be more effective and attractive.

SCIPIO.—Is remarkable for its dense leafage and its abundant, large, compact flower-trusses of a rosy-pink, marked on the upper segment by a rich black blotch. It forms a noble standard plant, with massive head, fully furnished with compact trusses of flowers, and what is of equal importance, viewing it as an ornamental evergreen, furnished with bold, enduring foliage, in such a way that the branches are always densely clothed with them.

SIGISMUND RUCKER.—One of the grandest of Rhododendrons, with fine laurel-like, frost-proof foliage, and immense trusses of well-arranged flowers, which are of a rich pucy-rose, and bear a dense blotch of closely set black spots, which render it thoroughly distinct and attractive. We regard this as being probably the finest hardy Rhododendron ever raised.

SIR J. SEBRIGHT.—An old but beautiful and effective variety, and very distinct. The flowers are rich purple, with a bronzy blotch.

STELLA.—A very handsome flower, of a pale rose, with intensely dark blotch.

SYLVIA.—A fine purplish-rose, with the greenish-brown blotch very conspicuous.

VAUBAN.—A handsome variety, bearing noble trusses of soft, reddish-lilac flowers, having a very conspicuous blotch of bronzy-yellow spots on the upper segment.—T. MOORE.

ON PERFECTION OF FORM IN THE TULIP.

WE have been requested to reprint, from the *Midland Florist* for 1847, Dr. Hardy's dissertation on "Perfection of Form in the Tulip," for the benefit of the younger race of florists. The subject was at that time much debated, but Dr. Hardy's papers completely settled the question, and his standard has since then been universally accepted:—

"It is now about three hundred years since the Tulip was first introduced into this country, and in consequence of the high estimation in which it has always been held, great attention has been paid to its improvement, not only in the purity of its ground-colours and the style of its coloured forms or markings, but especially, also, in the symmetry of its outline and the general form of its cup, or flower. No one now thinks of discussing the merits of any particular variety without first describing its form, and the importance attached to it is abundantly testified by the influence it exercises over the censors' decisions at our public exhibitions.

"We, therefore, should naturally conclude

that the judgment of florists, on this point at least, had long been regulated by rules founded on principles the correctness of which was universally admitted. But strange to say, if we inquire, 'What constitutes perfection of form in the Tulip?' we find the greatest diversity of opinion prevailing, even amongst the most experienced cultivators. In proof of this, it is not needful to adduce the various notions we hear expressed during our intercourse with amateurs and dealers. We have merely to examine the writings of those who are generally regarded as our best modern authorities on all subjects relating to this flower, to be fully convinced that great want of unanimity exists in reference to this point; and that the principles which ought to guide us are either not understood, or only very imperfectly developed. Thus, for instance, Mr. Groom, of Walworth, considers a semi-oblate spheroid the best form; Mr. Glenny, of the *Gardener's Gazette*, has long been the advocate of one-third of a hollow ball; Mr. Slater, of Manchester, tells us he differs from both the preceding, and says that the half and the sixteenth part of a circle is the most perfect form; whilst Mr. Wood, of Nottingham, prefers the half of a hollow globe. These are the only modern authorities whose writings appear to me worthy of notice, in connection with the subject under consideration; and amidst the conflicting opinions thus presented, we shall perhaps understand their merits better, and arrive more surely at the truth, if we examine them more minutely in detail.

"In the *Florist's Journal* (1840, p. 56), Mr. Groom states that he 'considers the shape of the cup of the greatest importance,' and says, 'when fully expanded, it should be a semi-oblate spheroid;' by which he means, in plain English, a form about one-fifteenth part less than the half of a sphere, or hollow globe. He, however, assigns no reason why this form should be preferred to any other; and, singularly enough, annexes other conditions which entirely destroy the beauty of the outline he recommends. 'The pole' of this 'semi-oblate spheroid,' he says, 'should be a little depressed;' and there should be 'a little swell outwards towards the lower part of the petal, which will give the flower a good shoulder.' This he considers 'the best form to retain the beauty of the flower during all its stages.' Tulips having this character may doubtless be found, but they are very unlike semi-oblate spheroids. Take, for example, *Princess Sophia*. Here we find 'a good shoulder,' as it is termed; but, as in almost every other specimen of this kind, the projection outwards being greatest in the three outer petals, the shape assumed is consequently somewhat triangular. Were the projection equal in every petal, the outline might be an irregular hexagon, but could not be circular. In both cases, the cavities thus formed in the interior of the flower invariably produce a number of shadows, which give false tints to its colours. These are serious defects, and it is not probable that many florists will be inclined to accept Mr. Groom's irregularly shaped standard as that which presents to us the most beautiful outline for a tulip. I rather imagine, that if our attention were directed to a rainbow, and we were seriously told that the grandeur of its form would be increased by a depression in the centre of its arc, and a bulging-out of its sides, after the manner of a man's shoulders, we should not have much respect for the taste thus manifested. Yet such is the deformity Mr. Groom would have us to regard as perfection in a tulip.

"Mr. Slater's opinions may be ascertained by referring to Harrison's *Floricultural Cabinet* (1842, p. 146), where he says:—"In form, I must beg leave to differ from Mr. Groom and Mr. Glenny, as not one tulip in two hundred comes up to their standard, even in the new varieties raised. If a circle were drawn, and divided into eight parts, taking full five-eighths of the diameter for the cup will give the most perfect form. In support of this opinion, I have scaled several drawings, as well as tulips, which appear to me to be the most unique in their proportions, and I find the greater part exceed six-eighths of the diameter. Mr. Groom's *Prince Albert*, bizarre, is six-eighths; his byblœmen, *Victoria Regina*, and *Polyphemus* also, are six-eighths. This appears to be the true standard; for it is allowed by all that *Polyphemus* cannot be excelled as respects form.' So that, because *Polyphemus* 'cannot be excelled' in form, and it measures in depth six-eighths of its diameter, this is the 'true standard;' but that, nevertheless, that which is 'true' must be regarded as not true, for the most perfect form, he assures us, is 'full five-eighths.' This is certainly an odd mode of reasoning. But Mr. Slater is capricious, for in his *Descriptive Catalogue* (1843, p. 12), he describes his standard as consisting of 'one-half and the sixteenth part' of a circle, or hollow globe; his 'most perfect form' having been found in the meantime, I suppose, quite imperfect. Opinions thus hastily adopted, and as hastily relinquished, are scarcely worthy of notice, and I would merely observe, in reference to them, that the more we add to the half-circle, the more imperfect does the form become; for if the additional portion preserve the true circular figure, the interior of the flower is obscured to a proportionate extent; or if it either reflex outwards, or rise at right angles with the horizon, the regularity of the outline is as certainly destroyed. Still, the quantity last added by Mr. Slater is so small,

no strong objection could be urged against it, if he did not (like Mr. Groom) inconsistently append other conditions which alter the whole figure. Thus he says:—"The cup of the flower should be composed of six thick, fleshy petals, which should run out from the centre at first a little horizontally, and then turn upwards, forming almost a perfect cup with a round bottom, rather wider at the top." How a cup can be round in the bottom, and at the same time horizontal, Mr. Slater does not explain, and beyond these remarks, it would be futile to follow him.

The next authority we shall consult is Mr. Glenny. In a long article, 'On the Properties of the Tulip,' in the *Gardener's Gazette* (1841, page 27), he gives the following as a rule 'laid down by Mr. Heming, in 1832, and adopted by the Metropolitan Society some time afterwards':—'The cup should form, when quite expanded, one-third of a hollow ball.' In support of this form, he reasons thus, both in the place above cited, and in the *Gardener and Practical Florist* (1843, page 152):—'All fanciers know that the beauty of a Tulip depends on the entire inside surface, for a blemish there destroys it. They know, too, that unless the entire inside surface can be seen at once, it must be seen under a disadvantage. It is clear, then, that to be enabled to see all the inside at once, the top of the cup must be largest, and any turn inwards at the top of the cup would hide part of the beauty, and particularly of many feathered tulips, where the principal pencilling is near the top. We arrive thus easily at one point, namely, that the flower must expand enough to open the internal beauties to the spectator; and if there be more than one-third of the circle, it will not do this effectually. One moment's observation will convince; though one-third is perfect, half a ball would not be materially worse, but it would be worse, for the depth would be one objection. The consequent uprightness of the petals near the top would deprive us of the perfect sight of the feathering, and forms a second objection. If there be any more than half, say, two-thirds, the tops would turn in, and the depth would be still greater; but it must be kept in mind that we speak of the form when expanded. The Tulip which expands more, must be flat and uninteresting; that which does not expand so much, is ineffective. As to whether the circle is better than the shoulder or the elliptic, there cannot be two opinions, after due consideration, for the circular sweep is more graceful than a shoulder, and shows the character far better (particularly towards the upper part of the petals), than an elliptic, for the sides are not so upright."

I have quoted Mr. Glenny's opinions thus fully, because some of the principles here set forth are important to a satisfactory solution of our inquiry; and although his conclusions are not invariably well founded, yet the great attention he has evidently bestowed on the subject, and the zeal he has uniformly displayed in promoting the improvement of our taste for correct forms, entitle his observations to our attentive consideration.—G. W. HARDY, *Warrington.*

(*To be continued.*)

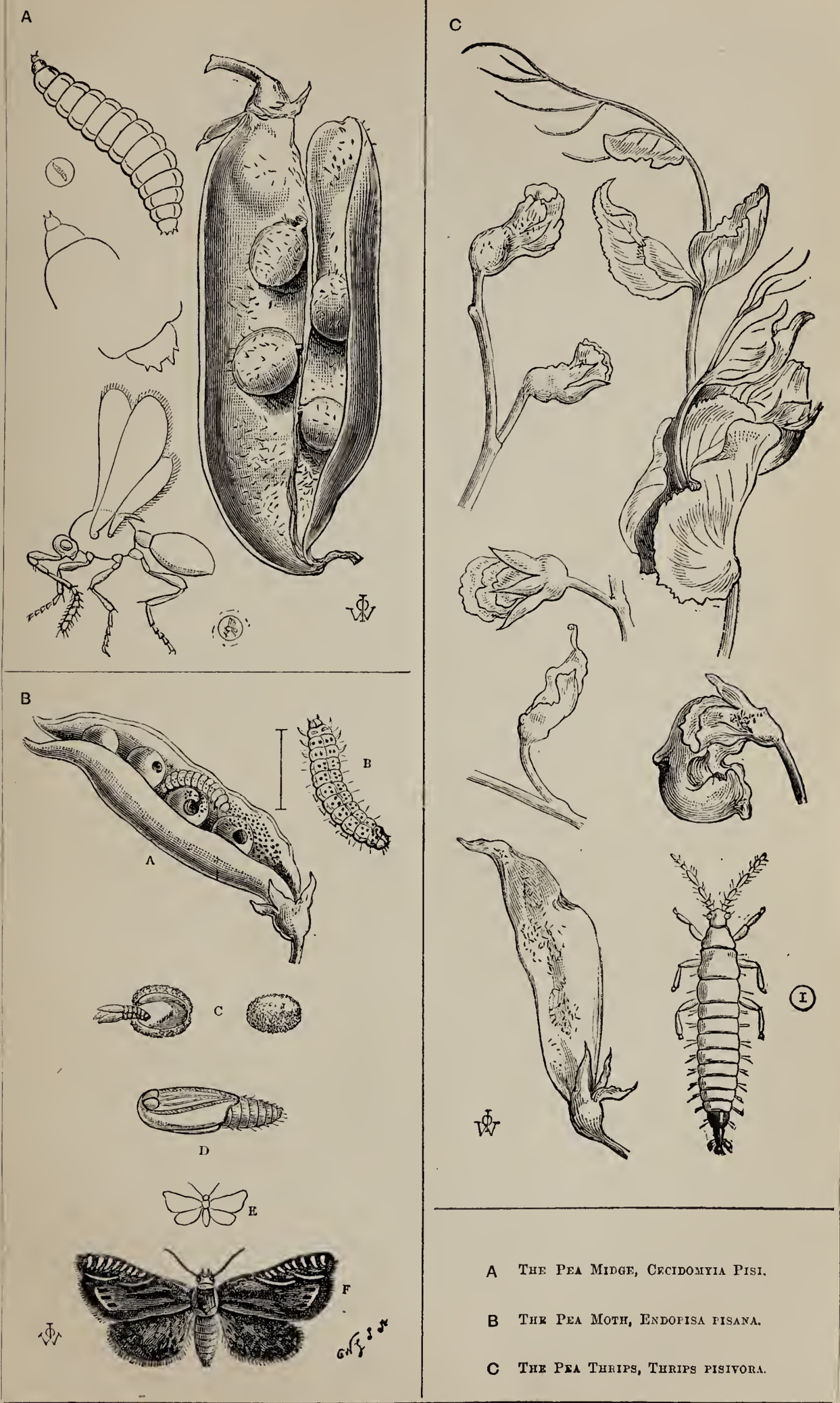
PEA PESTS.

AMONGST our garden vegetables, there are few that take a higher place in popular estimation than the different varieties of the Garden Pea; and with the exception of the inroads of mildew on the late summer crops, they are tolerably free from the "ills" to which cultivated vegetables are subject. Occasionally, however, the crops suffer from the attacks of certain insect pests, some of which are so minute as to almost escape notice, except through the disastrous results which they bring about.

An interesting series of articles on these pests of our Pea crops, written by Professor Westwood, was published last year in the *Gardeners' Chronicle*, from which source we borrow the following notes respecting them, with the accompanying illustrations.

The PEA MIDGE (Fig. A), the *Cecidomyia Pisi* of entomologists, is one of a group of delicately-formed, fragile insects, whose bodies and legs are of considerable length, and so feeble that the latter break off at the slightest touch. This midge has been found to be very injurious to the pea-pods during the summer months. Professor Westwood writes:—

"On looking over a row of the Premier Pea, we found many of the pods near the upper part of the plants shrivelled, blackened, and distorted, and on opening them some were found coated inside with blackish mould in parts, with the Peas more or less abortive; whilst on the inner surface of the pods and on the Peas themselves, were found a great number of minute white or yellowish maggots. In some cases the pods and inclosed Peas were well formed, but swarming with the little parasites, of which we counted more than 150 in one pod; and in another pod the number was still greater, giving the appearance shown in our figure, except that the little maggots, represented by short black lines, are in reality almost colourless. In the upper part of our figure, on the left-hand side, is given a magnified view of one of these maggots, which, when full grown (as shown in the small circle), are about one-twelfth of an inch in length. In the next figure is shown the front of the body, the head terminated by a small, somewhat conical joint, with two very minute points; and beneath this is shown the extremity of the body, with two pairs of small obtuse points. These little larvæ crawl about with considerable ease, notwithstanding their want of legs, by the assistance of the points at each end of the body. They have also the



A The Pea Midge, Cecidomyia Pisi.

B The Pea Moth, Endopisa pisana.

C The Pea Thrips, Thrips pisivora.

habit of bending the body into a circle, fastening the points of the head into those of the tail, and then suddenly letting them go with a jerk, causing the insect to spring to the distance of several inches, a muscular feat which is almost as if a man were able to take a leap of a hundred yards. When full grown, they fall to the ground and bury themselves in the earth. Running about, and even within some of the infested pods, we found a minute black shining hymenopterous parasite, the *Leptacis scutellaris*, represented in our lower figure, an insect closely allied to the Ichneumon, and we have no doubt that our little species is parasitic on the larva of the Pea Midge."

The PEA MOTH (Fig B.), *Endopisa pisana* or *Tortrix nigricans*, is an enemy more easily to be detected than the preceding. The caterpillars or "maggots" are found in the operation of shelling the peas, within the pod, and the interstices between the peas are often filled up with the moist excrement of the insect. The infested peas should on no account be allowed to fall into the colander, and this may be avoided, as the maggots are generally visible :—

"The caterpillar is found within what seems to be a sound pod, the egg from which it was produced being deposited within the floret, whilst in a very young and tender state. . . . . It is about half an inch long, of a pale greenish buff or dirty whitish colour, with a chestnut-coloured head, and dark horny jaws; the segment of the body succeeding the head is marked with two dark-chestnut or fulvous transverse marks, and the following segments bear minute black tubercles, from which spring very fine short hairs. . . . . On descending to the ground [which it does when full-fed, ready to undergo its transformations], the larva forms for itself a small oval cocoon of fine particles of earth, fastened together with a small supply of silk, within which it is transformed to a chrysalis, represented magnified in our figure; the hinder part of the body is armed with transverse rows of minute spines, which enable the pupa to push its way through its cocoon, when ready to assume the perfect state. The moth, when carefully examined, is a pretty little creature, measuring a little more than half an inch in the expanse of the fore-wings, which are of a rich brownish-black colour or dusky drab, with an olive tinge, merging into paler brown towards the extremity of the wings, the disc varied with small ochre-grey scales, the fore-margin of the wing with two dusky spots between the base and the middle; beyond the middle are eight small white or cream-coloured oblique spots, the first and third produced into shining bluish lines, extending nearly to the tip of the wing, and below these are a row of black marks on a patch of metallic scales; the hind wings are brown, with the base paler."

In the month of June in the following year, the moths are developed during the blooming period of the pea, and their eggs being deposited within the young flower, the caterpillar or maggot soon appears, to carry on its work of destruction.

The PEA THRIPS (Fig. C), *Thrips pisivora*, is another very troublesome pest, which attacks the peas by getting into the flower-buds, and sucking the orange-coloured pollen and the embryo pea in its soft and tender condition, the result in Professor Westwood's garden being that, notwithstanding a strong growth, many of the blooms were completely crippled; and where the pods afterwards pushed forwards at all, they were shrivelled and distorted :—

"The large upper right-hand figure shows the end of a shoot in which the leaves and flower-buds were all shrivelled up into a shapeless mass, out of which a weak terminal sprig had been developed. A small flower, with its curved pistil, will be seen pushing through the middle of the mass on the right side of the figure. In the top figure on the left hand will be seen two blooms, completely crippled, and incapable of development by the punctures of the thrips. In the next lower figure the flower has pushed itself somewhat more open, but with the petals all shrivelled. In the next figure the pod has been formed, but is weak and distorted; whilst in the right-hand middle figure the pod has grown to a considerable size, but is contorted; and in the bottom left-hand figure the pod has been only partially developed, the apical half shrivelled up, and the outer surface of the pod wrinkled by the punctures of the insects. This species of thrips is scarcely one-twelfth of an inch in length, of an orange colour, and closely resembles the pollen of the pea, in the midst of which it must be looked for. The antennæ are 7-jointed, the fourth joint appearing as though formed of a series of rings, and the fifth, sixth, and seventh joints are gradually smaller and slenderer; the extremity of the body is dark chestnut-coloured, terminated by a cylindrical horny borer. The vast number of specimens which we met with agreed with our figure in their structural details, and appear to be fully-developed females, although destitute of wings. We met with no males, unless, indeed, a very few other black fully-winged specimens may be of that sex."

Mr. Marshall, of Ely, states that this *Thrips* has ravaged his pea crops for the last ten years, and that they had suffered so much, that he had determined to give up growing them altogether. The illustrations show the different stages of the disease produced by the action of these destructive little creatures.—M.

ASPARAGUS CULTURE
IMPROVED.

UNDER the title of *Culture Perfectionnée des Asperges*, a letter addressed to M. Carrière, by M. O. Lainé, of the Central Horticultural Society of France, has been published in the *Revue Horticole* (1881, 166). M. Lainé desires to make known a method of growing Asparagus to the largest possible bulk, thanks to the use of what he calls a rational manure, the composition of which it is his object to explain. He first lays down the axiom derived from experience, that Asparagus progresses and produces best in a sandy soil, rich in potash. The manure

which he specially recommends as capable of producing the large Asparagus, in consequence of its being so thoroughly congenial to its nature, is the silicate of potash, which, in decomposing, gives to the soil the elements which are indispensable to the successful culture of this crop. He adds :—

"Asparagus should be cultivated in banks of light earth, of the nature of that of Argenteuil or Herblay, or, failing these, in a soil prepared for the purpose. The soluble silicate of potash at 28 deg. of Beaumé's hydrometer, is to be reduced to 4 deg. of the same instrument. Of the preparation at that strength (4 deg.), a litre (about $1\frac{3}{4}$ imperial pints), is to be poured into four litres of water; and so in proportion for large quantities. The manure thus prepared is to be carried to the fields in a cask, and distributed with a rose watering-pot on the banks of earth, *before the Asparagus has pushed.* Silicate of potash at 28 deg. is worth 36 fr. (£1 8s. 10d.) the 100 kilogrammes (220 lb.); reduced to 4 deg. Beaumé, 5 fr. (4s.) the 100 kilogrammes. This, added to four litres of water, gives a volume of 100 litres of manure for 1 fr. ($9\frac{3}{5}$d). This mode of production by the aid of silicate of potash does not change the asparagin, or neutral organic constituent of the plant, though the *gourmet* might, perhaps, find the asparagin more concentrated in the middle-sized Asparagus than in that whose parts have been strongly developed by culture. Our aim is to demonstrate to cultivators that they may, almost according to their wish, obtain large Asparagus, and to instruct them so that they may profit by our experience."—O. Lainé.

PARAFFINE *versus* MEALY BUG.

SINCE paraffine oil has been used in gardens, mealy bug is rarely to be seen there, thanks to Mr. Thomson, of Drumlanrig, who was the first to bring it prominently into notice. When it is applied neatly and dexterously, it is the most efficacious of all insecticides. At one time, I believed in clean water and force, but, as the old saying goes, "There's naething sae crouse as a well-washed louse;" so with the insects of the garden, though they were dislodged, they were still as cheery and confident in their new quarters as ever. Now we have the paraffine cure, there is no excuse for having plants over-run with mealy bug, scale, and other insects; and in applying the paraffine we are often reminded of another saying, "There's naething sae wae as a well-washed flac." We have here a narrow peach-house, some 150 ft. long, having peaches on the back wall, with Roses up the rafters, which are 6 ft. apart. Before the Peaches were in flower or the Roses showed sign of budding, we syringed the whole interior of this house—roof, walls, in fact every part, including trees and Roses, with water and paraffine, two wineglassfuls to four gallons of water, and though formerly we used to be troubled with green-fly, this year we have little or none; and more, we have no spiders about the rafters, for the paraffine seems to have entirely discomfited them. I also feel assured that red-spider will be next to *nil* with us. When this oil is used carefully on growing plants at the rate of one wineglassful to four gallons of water, there need be none of these pests now in gardens, to any such extent as to be offensive.—H. K., *Floors.*

ROCK PLANTS.

A WELL-MADE Rock-garden, well planted, is a source of much enjoyment, and is a desirable adjunct to all good gardens. The best I have seen is that of Messrs. Backhouse, of York; and if the cost of it could be told from its origin up to the present time, I imagine the information would be rather startling! The rock-garden in the Botanical Gardens at Edinburgh is another excellent example, the convenient plan of giving many plants a separate "pocket" or compartment to themselves being there well shown.

There are a good many ways of making a Rockery, some good, others the reverse; but of all rockeries, that made of glass or brick "slag," or vitrified refuse of various kinds, is, perhaps, the worst. A rockery of white flint stones, garnished with oyster-shells, is another bad form; and mounds of earth of plum-pudding shape, with sharp-pointed stones stuck therein, like almonds, is another barbarous effort of which some rock gardeners are very proud. It is not always necessary, or even advisable, to elevate stones on raised earth-works, in the making of a rockery for plants. Some of the best of all rockeries are those made in the hollows of old quarries below the level of the surrounding ground, and yet we often see rock-work elevated on mounds in exposed positions, and find that only the

hardiest of common herbaceous plants can hold their own on them, until they are surrounded with shelter-belts of shrubs and trees.

The "pocket" system, alluded to, is useful where a mixed system of planting is adopted. Otherwise, the strong-growing plants spread over the weaker, or rarer ones, and so cause much labour and other inconvenience. Where the rockery is large, provision may be made for plants of all kinds. Thus a portion may be made with loamy earth, or with peat and leaf-mould. Then, again, limestone is most suitable for some plants, granite and sandstone for others. No matter how a rockery be made, the object for which it is intended must always be borne in mind. If it is for plant-culture, adapt it for their requirements throughout. The rule-ordinary of most rockery-makers is to produce masses of stone or stucco work in the "picturesque" manner, without a thought of plants. I remember a brand-new rockery being "built" in the Shires by a local architect, who some time afterwards brought some friends of his own profession to look at it. They came to worship picturesque stones, but went away grumbling because "an old fool of a gardener" had covered them with "a lot of beastly creepers;" and so some other builders of rock-work are not a little wrath, if the "fool of a gardener" hides their stonework with plants.

Another fallacy which has long enough existed in connection with Alpine and rock plants is that poor or ordinary earth is the best for them. Actual manurial stimulants are not quite as essential for mountain plants or for flowering herbaceous things as for Cabbages or Rhubarb; but the best of loam or peat should be afforded them, if anything more than mediocre growth and inflorescence be desired. Mr. H. C. Hart, in his notes on the Saxifrages, Dryas, Poppies, &c., of the Arctic regions, is especially careful to point out that the most luxuriant patches of those hardy blossoms, which approach nearly to the North Pole, are found near aukeries or bird-cliffs, or amongst the former old fire-places and other *débris* of the old Esquimaux settlements. Those about to begin the cultivation of rock-plants would do well to commence with the more common strong-growing plants first, adding rarities and delicate things as experience is gained.

The loamy portion of a rock-garden may be made attractive with Dentarias pink and white, Primulas of all sorts, Aubrietias, Lithospermums, Hepaticas, Snowdrops, Crocuses, Snowflakes, and the vernal Squills. The dwarf Phloxes make excellent rock-plants; so do the Saxifrages and Sedums. One of the prettiest effects I ever saw in rock-gardening was obtained by carpeting the ground and stones with Sedum acre aureum. Scilla sibirica, Narcissus Bulbocodium, N. Horsefieldii, and Primula rosea had previously been planted, and these, peering through, produced a lovely April effect.

The more shady portion of a rockery may often be formed of peaty soil, and then carpeted with Linnæa borealis, Cornus suecica, Menziesia polifolia, Erica carnea, and other dwarf shrubs, amongst which Trilliums, Lobelia ignea and L. cardinalis, Primula japonica, and even such large subjects as Lilium auratum and the American Bog Lilies, may be planted with success. Last autumn we had Anemone japonica alba five feet in height, in a shady peat rock-garden, and the effect of Lilium longiflorum Wilsoni near a clump of Lobelia ignea was also very brilliant. The dwarf-growing Campanulas, again, are excellent rock-plants, as also are some neat-growing annuals, such as Androsace lactea, Ionopsidium acaule, Papaver aurantiacum and its variety, P. alpinum, the Night-scented Stock, and Schizopetalon Walkeri.—F. W. B.

WINTER PROPAGATION OF ROSES.

SOME persons may consider this to be a doubtful process, and I daresay there are many who never saw it done; while not a few who may practise the budding of Roses in summer with a fair amount of success, might find this method rather difficult to accomplish. But it can be, and is, done every winter to the extent of many thousands of plants in Mr. Smith's Nursery at Worcester; and now that the frost has made such inroads amongst the Roses, it is interesting to know that during the severe frost, this operation was going on.

In this establishment, they generally begin the grafting of Roses in November, and perhaps keep on at it for four months or more. The propagating house for Roses is a span-

W. H. Fitch. del

Chromo. P. Stroobant. Gheut.

Plum Pershore.

roofed one, upwards of 100 ft. long, having paths separating a good wide pit in the middle from the two side platforms. The budding of Roses and the grafting of Roses are very different operations. Buds when worked outdoors generally take eight or nine months before they start into growth, but grafting performed in November will, under good practical care, furnish young shoots six to eight inches high by the New Year, and will often give small Roses before the plants are two months old from the graft. To do this well and successfully requires the vigilance of a well-practised eye, until they are fairly started into growth. After they have grown to six or eight inches in height, they are moved into an adjoining house of over 200 ft. long, but parted into two in the middle. This house is much narrower than that wherein they are propagated, and has only one pathway, under the ridge of the roof. When the young plants are partly hardened off in this house, they are, according as they attain strength, taken to the large Rose-house, which is a noble, wide house, 70 yards long. Besides these, there are many pits devoted to Roses. The winter-propagated Roses are many of them ready to send out by the month of May—perhaps over 30,000. It is chiefly Tea Roses that are propagated in this way.—George Dawson, 23 *Bedwardine Road, Worcester.*

THE PERSHORE PLUM.

[Plate 540.]

No one would be inclined to select this plum, either on account of its quality or appearance, Still, it is a variety of no ordinary importance, and is being cultivated to an increasing extent every year for market purposes. Its great merit consists in its enormous and almost certain cropping qualities. It is rare, indeed, to miss a crop; even during the past three or four bad plum seasons, a plentiful crop of the Pershore has been secured.

It comes, as its name implies, from Pershore, in Worcestershire, and is much cultivated in the fruitful valley of Evesham for the Birmingham markets. It is also grown by Mr. Dancer, of Chiswick, to some extent, and to him we are indebted for the examples here figured.

The fruit may be described as of medium size, ovate, or slightly narrower at the stalk end, like a small Magnum Bonum. The skin is greenish-yellow, becoming golden when quite ripe. Flesh tender, but adhering to the stone, tolerably juicy, but without much flavour. It is a very excellent variety for kitchen use or for preserving.

It comes in season at the end of August, a week or so later than the general glut of Plums, and consequently is valuable on that account. It has the singular habit of producing suckers, in which way it is often propagated, and succeeds well on its own roots—being, perhaps, the only Plum that has this peculiarity.

It will be observed that there are amongst our cultivated Plums three distinct types of flavour. There is, first, the rich luscious flavour, of which the Greengage is a familiar example, and which has a character and flavour all its own; secondly, the ordinary plum-flavour, as represented in the majority of the cultivated sorts; and thirdly, the rough austere flavour of the Damson, which is but little removed from the wild type. The Pershore belongs to the second group. It is a singular fact, which so far as we know has never yet been noted, that the poorer-flavoured Plums, such as that now before us, make a preserve quite as rich and good as that from the fine dessert varieties. —A. F. Barron.

ELEMENTS OF ORCHID-CULTURE.

Chapter I.—Material and Appliances.

According to the request of your correspondent from Sevenoaks, and with the view of engaging the attention of beginners generally, I purpose giving a short series of papers in the Florist under the above heading, in the hope that they may be of some service in extending the knowledge and guiding the hands of those who are becoming interested in the pursuit of Orchid-culture.

Looking to the time and space at my disposal, my remarks must necessarily be not only as brief and concise as possible, but they cannot touch upon many things which might be expected of one essaying to write on the culture of these plants. It will, therefore, only be the more important practical details which will be discussed. The first consideration of importance that occurs to me is the supply of the needful materials and appliances; and here, although properly coming under this heading,

I must abandon dealing with the construction and heating of the Orchid-house, and look upon it as ready for receiving the various species that the culturist elects to grow.

The first important item to provide for and prepare is what, in the ordinary way of potting, is called "soil." Now, there are two classes of Orchids which no one ought to be at a loss to separate for cultural purposes, the one epiphytal, the other terrestrial. These two sections require separate and distinct preparations in the way of root-feeding. The former abhors soil; the latter takes to it like other plants. The epiphytal division is far the most important, as comprising not only a sweeping majority of species, but as combining gorgeousness of colouring, aromatic or fragrant odours, fairy forms—in fact, all that is interesting and attractive, winning over thousands, and holding them spell-bound by their charms. One could enlarge on this point, but it is not needed. Look at the results of sales, both public and private, and if this be not the cause, then buyers are what we, in Scotland, call "daft"! The preparation of material for the root-comfort and feeding of these epiphytal plants, then, must *not* be "soil," as it is generally known in the gardening art. It must be something elastic, enduring, and sweet.

There are four articles which should be at command at all times in the potting-shed. First, potsherds; second, charcoal; third, sphagnum; and fourth, fibre. There is no difficulty about the first two, and there need be no lesson inculcated about them, only they should be *clean*. About sphagnum there is some contrariety of opinion, as some prefer what is called living sphagnum. There is no doubt that live sphagnum is needed, if for nothing else but top-dressing; but it is not imperative that it should be used throughout the preparation, or, to use a term better understood for mixture purposes, prescription. In time, of course, in the body of compost, from suffocation it would die. It is better, in fact, to have at hand a portion of decaying sphagnum, which is usually found in bogs, and cuts up with the spade into nice cubes. I always think there is more feeding about this than about the top-layers, which command the largest attention. The fibre is possibly the most important ingredient, as it is supposed to contain materials which infuse strength into the growing plants. This fibre is often not very comeatable, as it must be tough, and such as to withstand the force of decomposition for as great a length of time as possible. Undoubtedly such peat as is recognised as Wimbledon peat is about as good as can be had. Of course, it must be rid in great measure of its earthy particles, unless for particular species. A very good fibre is obtained in woods—pine-woods, for instance—where the trees are not too thick of themselves, or where coppice for game-cover is not too prominent. It is better in the selection to have it from a peaty than a loamy soil, and where we can, as it were, tear it off the surface—scalp the surface, in fact; that is the kind of fibre I prefer to all others. These four articles which contribute to the general prescription for epiphytical orchids, should be housed and kept dry. The live sphagnum, on the other hand, must be kept in layers and moistened, to be used as required for top-dressing.

As to the proportions of these four articles, that depends much upon the plants, their condition, and the system of watering at the root and of moistening the atmosphere which may be adopted. The further I go, the more difficulty I feel in passing over what it may be necessary to descant upon, as there are many ways of doing things, none essentially wrong, and all arriving very near to the same goal. Suffice it, then, that all distichous-leaved plants, such as *Aërides*, *Saccolabium*, *Vanda*, *Phalænopsis*, &c., cannot endure in the slightest degree anything of the nature of earthy particles in and about their roots, so that the first three articles named can only be used with impunity, and the sphagnum almost in the least proportion of the three. But again crops up the question of system. Some suspend in baskets, some place in pots and pans, some have low moist houses, others have airy dry ones; and hence a prescription suitable for the one might be very damaging if used for the other. A very sensible way out of the difficulty would be to suggest that those using dry airy houses should have the sphagnum, as being the best moisture-holding medium, in the greatest proportion of the three, and *vice versâ* in the low damp houses. But then comes in the question of constitution, which I cannot touch upon here.

Pseudobulbous plants, such as *Cattleya*, *Odontoglossum*, *Oncidium*, and other cognate

genera, require the prescription to be of a different character, more of the fibre (which may not be introduced at all in the distichous-leaved species), and less of the sphagnum, with a fair proportion of the other two. The exact proportions needed is a question of practical knowledge, which each grower must find out for himself, and act accordingly. There is no hard-and-fast line along which to compel the cultivator to go. A good deal must, after all, be left to judgment and the character of the fibre, on the one hand, or of the sphagnum on the other. If deep pots be used, that is, pots measuring in inches about as much in depth as in diameter, then a good foundation of potsherds and charcoal may, with profit, be introduced. All these aerial roots—that is, those roots which in a state of nature would be clinging to the bark of living or dead trees—do not dislike to interlace themselves among potsherds and charcoal; in fact, they prefer a surface of this kind to being compelled to get into a medium where decomposition is going on. Growers have observed this so prominently, that in order the better to preserve disintegration, they now and then, with advantage, too, slip a junk of charcoal or a piece of potsherd into the body of fibre and sphagnum combined.

Baskets, whether they be of teak or clay, in whatever form, need less of the crocks, as a better physical system is maintained through a more incisive current of air playing in and around them. In all cases of this kind, more artificial moisture must be supplied. Many an excellent "start" of a plant has been impaired, and eventually destroyed, for want of proper moisture appliances. Every beginner should note that it takes far more to water a set of plants suspended, than a similar set resting on tables or beds, and often grown in deep pots. And, therefore, sphagnum or fibre, or both combined, is more of a necessity for nicely balancing moisture in suspended plants than in those situated at lower levels, and with the moisture of floors, tables, &c., arising immediately about them.—James Anderson, *Meadow Bank, Uddingstone, N.B.*

(To be continued.)

ASPARAGUS AND SALT.

OUR experience has been gained on both heavy and light soils. On the former, the Asparagus would have been far better without the salt, notwithstanding its usefulness in destroying weeds; but on light, dry, sandy soil it has always been a decided advantage to the crops. When salt is used on heavy ground, the land becomes more solid, holds wet longer, and is manipulated with greater difficulty. Young plants and seeds have to struggle hard for life when in heavy soil which has been freely salted, even if it may have been applied years before. On a piece of ground a few yards from where I write, a quantity of manure, heavily charged with salt, was emptied inadvertently, and to this day, though five years have elapsed, the ground when turned up is very different to the rest, it being sodden and clinging to the spade like pitch. Returning to Asparagus, I remember a number of years ago, while my father was forming a new Asparagus ground, he used freely in the soil sand carted from the sea-shore, with quantities of seaweed, trenched it well into the ground with other loose material, such as old turf, charred wood, and good farm-yard manure, and the "grass" did exceedingly well in this preparation. There was, no doubt, plenty of salt in the sand and seaweed.—M. T., *Impney.*

Your correspondent, "H. K.," at p. 77, condemns the uses of salt as a manure for this crop. He seems to overlook the nature of the plant, which is at all times a safe guide. There are acres of Asparagus growing round our shores in salt land, which is regularly covered by the tides. It is but a lame excuse to point to a poor example near the coast. Asparagus beds can be badly made in that position as well as in inland places. At the same time, there is abundant proof that the plant can be and is grown quite as good as the foreign produce in deep sandy land reclaimed from the sea, or where seaweed, &c., has been used in making the beds.

It seems exceedingly preposterous that we must be told by every one who writes on this subject, how far superior the French system is to ours. Those who hold this opinion should first prove that it is the 'system' which gives these results, and not the inexhaustable saline properties of the soil. This is the same on the plains of the Danube, and in other parts of Europe, where the plant is grown successfully. Besides this, salt is a good safe manure for old Asparagus beds, and for many other plants as well. It is not, indeed, improbable, from so much attention having been drawn to this excellent vegetable of late, that its culture may reach such a position as to share in the encomiums passed on the 'system' pursued by the French. Those who have to make Asparagus beds inland, will find good deep trenching and plenty of good stable manure, night-soil, and sand, a good foundation.—J. Fleming, *Cliveden.*

NATIONAL AURICULA SHOW.

NORTHERN SECTION.

THE Show of the Northern Section of the National Auricula Society was held in the Town Hall, Manchester, on April 26th, in conjunction with a Spring Show of the Manchester Royal Botanical Society. As is often the case, there were more flowers brought together than seemed likely, in a season so far from straight and kind. Still, however, hard times had told both upon the quantity and quality of the blooms—and a deficient yield is as easily seen in flowers as in a bad harvest of corn and fruits. The date was a very safe one to catch the full breadth of the Auricula bloom in anything like a fair season; and all that was not done was the effect of circumstances beyond the control of those engaged in the friendly contest. The Polyanthuses were a stronger feature here than in the Society's Southern Show, and the promise of the new seedlings among them is increasing more and more. First-class Certificates were awarded to Mr. Thomas Mellor for seedling Auricula, Reliance, a white-edged variety, and to Mr. Ed. Pohlman for Brunette, a dark self. The following is the full list of awards:—

AURICULAS.

Class A. 6 *dissimilar, Alpines excluded.*—1st, Mr. J. Booth, Failsworth, with Prince of Greens (Trail), the premier flower of the day; George Lightbody (Headly), Alexander Meiklejohn (Kay), Lancashire Hero (Lancashire), Aeme (Reid), and Charles J. Perry (Turner). 2nd, Mr. B. Simonite, Rough Bank, Sheffield, with John Simonite (Simonite), Seedling (green-edge), George Lightbody, Lancashire Hero (grey), Mrs. Douglas (Simonite), and Frank Simonite (Simonite). 3rd, Mr. E. Pohlman, Halifax, with Alma (Lightbody), Marquis of Lorne (Campbell), Catherina (Summerscales), Garibaldi (Pohlman), New Green (Headly), and Chas. J. Perry. 4th, Mr. T. Mellor, Ashton-under-Lyne, with General Bolivar (Smith), Prince of Greens, and four Seedlings. 5th, Mr. S. Barlow, Castleton, with Queen Victoria (Kent), Beauty (Trail), Frank Simonite, Lovely Ann (Oliver), Colonel Taylor (Leigh), and Lord Palmerston (Campbell). 6th, Mr. W. Bolton, Warrington, with Beauty, Lovely Ann, Frank Simonite, Lancashire Hero, Ellen Lancaster (Pohlman), and Alexander Meiklejohn. 7th, Mr. W. Brockbank, Didsbury, with Lancashire Hero, Alexander Meiklejohn, Florence, Lovely Ann, Colonel Taylor, and Aeme.

Class B. 4 *dissimilar, Alpines excluded.*—1st, Mr. B. Simonite, with Lancashire Hero (green), a Seedling, Mrs. Douglas (Simonite), and Frank Simonite. 2nd, Mr. J. Booth, with Aeme, Marquis of Lorne, Alma, and Prince of Greens. 3rd, Mr. T. Mellor, Ashton-under-Lyne, with Ringleader (Kenyon), Reliance (Mellor), and two Seedlings. 4th, Mr. E. Pohlman, with Anna (Trail), Beauty, Garibaldi, and Alexander Meiklejohn. 5th, Mr. S. Barlow, with Smiling Beauty (Heap), Anna, Alexander Meiklejohn, and Charles J. Perry. 6th, Mr. W. Bolton, with Confidence (Campbell), Talisman (Simonite), J. Waterston (Cunningham), and a Seedling (self).

Class C. 2 *dissimilar.*—1st, Mr. J. Booth, with Aeme, and Dr. Horner (Reid). 2nd, Mr. E. Pohlman, with Mazzini (Pohlman), and New Green (Headly). 3rd, Mr. W. Bolton, with a Seedling (self), and Alexander Meiklejohn. 4th, Mr. S. Barlow, with Duke of Argyll (Campbell), and Beauty. 5th, Mr. J. Beswick, Middleton, with Erebus (not Horner's), and Lovely Ann. 6th, Mr. T. Mellor, with two Seedlings. 7th, Mr. B. Simonite, with Lancashire Hero, and John Waterston.

Class D. 2 *dissimilar: maiden growers.*—1st, Mr. E. Shepley, Middleton, with Rev. G. Jeans (Trail), and Pizarro (Campbell). 2nd, Mr. G. Geggie, Waterloo Nursery, Bury, with General Neil (Trail), and Mrs. Sturrock (Martin).

Class F. *Singles: green-edged.*—Premium and 2nd, Mr. Booth, with Colonel Taylor (Leigh). 1st, Mr. B. Simonite, with a Seedling; 3rd, with Lovely Ann (Oliver); and 4th, with Talisman (Simonite). 5th, Mr. Mellor, with a Seedling, No. 5. 6th, Mr. S. Barlow, with King of Greens; 8th, with a Seedling. 7th, Mr. Brockbank, with Admiral Napier (Campbell).

Class G. *Singles: grey-edged.*—Premium, Mr. Mellor, with Ringleader; 1st, with Confidence; 2nd, with General Bolivar; 3rd, with John Waterston; and 5th, with a Seedling. 4th, Mr. S. Barlow, with Samuel Barlow; 6th, with Alderman Charles E. Brown (Headly); and 7th, with Complete (Sykes). 8th, Mr. W. Bolton, with George Lightbody (Headly).

Class H. *Singles: white-edged.*—Premium, Mr. T. Mellor, with Reliance (seedling); 2nd, with John Simonite; 5th, with a Seedling. 1st, Mr. Booth, with Aeme; 4th, with Mrs. Headly (Lightbody). 3rd, Mr. Shaw, with Catharina. 6th, Mr. Brockbank, with Frank Simonite. 7th, Mr. B. Simonite, with Richard Dean (Simonite). 8th, Mr. Pohlman, with Bright Venus (Lee).

Class I. *Singles: self.*—Premium, 3rd, and 8th, Mr. Mellor, with Seedlings. 1st, Mr. Pohlman, with a Seedling. 2nd, Mr. Shaw, Bury, with Charles J. Perry (Turner). 4th, Mr. R. Gorton, with Blackbird (Spalding). 5th, Mr. Booth, with Ellen Lancaster (Pohlman); 7th, with Marquis of Lorne (Campbell). 6th, Mr. S. Barlow, with Mazzini.

SEEDLINGS.—Mr. T. Mellor exhibited a very promising white-edged variety, named Reliance, a seedling from Smiling Beauty crossed with John Simonite; the segments were somewhat pointed, but in other respects the flower was satisfactory. Mr. E. Pohlman showed Brunette, a dark self. Both were awarded First-class Certificates.

ALPINE AURICULAS.

Class E. 4 *dissimilar.*—1st, Mr. J. Beswick, with Goliath, Conspicua, Dolly Varden (Turner), and Diadem (Gorton). 2nd, Mr. T. Mellor, with Conspicua, Dazzle (Dean), Diadem, and Ovid (Gorton). 3rd, Mr. S. Barlow, with Brightness, Beatrice (Turner), Spangle (Turner), and Mercury (Turner). 4th, Mr. E. Pohlman, with four Seedlings. 5th, Mr. R. Gorton, with Mrs. Meiklejohn (Meiklejohn), Beatrice, Diadem, and George Lightbody (Turner). 6th, Mr. Shaw, with Queen Victoria (Turner), Ovid, Lord Elcho (Turner), and Diadem. 7th, Mr. W. Brockbank, with Ovid, Sydney (Turner), Diadem, and Tenniel (Turner).

Class K. *Singles: yellow centres.*—Premium, 1st, and 3rd, Mr. Pohlman, with Seedlings. 2nd, Mr. Beswick, with Dazzle (Dean). 4th, Mr. Shaw, with Ovid. 5th, Mr. R. Gorton, with Mrs. Meiklejohn.

Class L. *Singles: white centres.*—Premium,

Mr. Pohlman, with a Seedling. 1st, Mr. Beswick, with Conspicua. 2nd, Mr. Gorton, with Beatrice. 3rd, Mr. Booth, with a Seedling. 4th, Mr. S. Barlow, with Lord Elcho; 5th, with Little Annie.

FANCY AURICULAS.—*Class* Q. 12 *dissimilar.*—1st, Mr. S. Barlow. 2nd and 3rd, Mr. W. Bolton.

GOLD-LACED POLYANTHUSES.

Class M. *Black-grounds: 3 dissimilar.*—1st, Mr. J. Beswick, with Congleton Queen, Lancashire Hero, and a Seedling. 2nd, Mr. S. Barlow, with Exile, President, and John Bright. 3rd, Mr. W. Brockbank, with Exile, Lancashire Hero, and Cheshire Favourite. 4th, Mr. W. Bolton, with Exile, Lancashire Hero, and Cheshire Favourite. 5th, Mr. T. Mellor, with Exile, Lancashire Hero, and Cheshire Favourite.

Class N. *Red-grounds: 3 dissimilar.*—1st, Mr. J. Beswick, with Lancer, George IV., and an unknown variety. 2nd, Mr. S. Barlow, with Sunrise, Firefly, and Walsall Seedling. 3rd, Mr. Brockbank, with Prince Regent, George IV., and William IV. 4th, Mr. W. Bolton, with Lord Lincoln, George IV., and an unknown variety.

Class O. *Singles: black-grounds.*—Premium, Mr. Brownhill, Sale, with Cheshire Favourite. 1st, Mr. Beswick, with Cheshire Favourite; 2nd, with Lancashire Hero. 3rd, Mr. Shepley, with President; 4th, with Exile; 5th, with Rev. F. D. Horner. 6th, Mr. S. Barlow, with a Seedling; 7th, with John Bright.

Class P. *Singles: red-grounds.*—Premium, Mr. S. Barlow, with Sunrise, very fine; 1st, with Sunrise; 5th, with Walsall Seedling; 6th, with Firefly. 2nd, Mr. Shepley, with William IV. 3rd, Mr. Beswick, with George IV.; 7th, with an unknown variety. 4th, Mr. Geggie, with Prince Regent.

FANCY POLYANTHUSES.—*Class* R. 12 *dissimilar.*—1st, Mr. W. Brownhill, Sale.

PRIMROSES.—*Class* S. 12 *dissimilar.*—1st, Mr. Wm. Brockbank.

The Premier Auricula was Trail's Prince of Greens, exhibited in the first prize six by Mr. J. Booth, of Failsworth.—F. D. HORNER, *Kirkby Malzeard, Ripon.*

TWO GOOD CUCUMBERS.

DURING the past fifteen years I have grown a good many varieties of Cucumber, but for general purposes I have come to the conclusion that *Telegraph* and *Tender and True* are the most reliable varieties, when obtained true to name—which can generally be done by procuring the seeds from a respectable seedsman. *Telegraph* has, as is well known, been before the public for many years, and for general purposes is hard to beat. It has a strong constitution, is a free bearer, and is suitable both for summer and winter growth. From two plants, grown on the extension system, we have had a fair supply during the whole of the past winter, which, to say the least, has been a trying one for cucumbers. *Tender and True*, when true, is a splendid variety for exhibition purposes, and is, moreover, very well adapted for pit and frame growth, where there are means for supplying artificial heat when required, which is a property that some of the large exhibition varieties do not possess. For the last three years we have grown a number of plants in pits, and the quantity of fine, handsome fruit we have annually cut from them has been immense.

In penning these notes, I have no wish to say anything against any of the many new varieties that are annually sent out. Still, I would suggest to your amateur readers generally the desirability of their sticking to a really good sort, until it fails them, in preference to relying on any of the so-called new varieties, which, in many cases, moreover, have but the novelty of name to recommend them.—H. J. C., *Grimston.*

USEFUL SLUGS.

THE useful slug (*Testacella haliotoidea*) occurs in great abundance at Shirenewton. My garden is full of it, and I found it also in a grass field between Shirenewton and Itton Court. I found several in the act of swallowing worms; they eat them whole, and I have seen one half hanging out of their mouth whilst the remainder was swallowed. I also caught one eating a slug (*Arion empiricorum*); these they eat by bits. I filled a large pot with stones and soil, and placed it on a brick above a pan of water, to see what these slugs would eat. I put in twenty-five specimens of *Testacella*, and with them twenty-five worms and twenty-five slugs of *Arion empiricorum* and *Limax agrestis*. In forty-eight hours I turned them all out of the pot, to examine their condition. All the worms had been eaten, and all the slugs, a small portion of one only being found. There were only fifteen *Testacellas* in the pot, but I afterwards found seven under the pan of water; so that ten must have swum across and escaped. I have turned a hundred specimens into my fernery, which is some distance from the garden; and I also turned a hundred into one of my vineries, and they are doing well. On one night I had a hunt, and in one particular portion of the garden I found above one hundred specimens of *Testacella*, and amongst them only five other slugs. In another portion of the garden I found only five *Testacellas*, and here there were hundreds of other slugs. I only know of another locality, close to Bath, where this slug is found.—E. J. LOWE, *Highfield House, Nottingham.*

MARÉCHAL NIEL ROSE.

TO have this fine Rose in a state of perfection, any one possessed of a good Gloire de Dijon indoors should dot it over with buds of the *Maréchal*, allowing them to grow freely together in good robust fashion. The mixture is fine, and the yellow roses reach to twice the size they attain under any other conditions. Owing to the vigour of the grand old Gloire, the weakly footstalks of the yellow become stronger, and better able to hold up the flowers in the expanding stage.

We have not proved this arrangement out of doors, so as to be able to vouch for its success, as both last winter and the preceding one killed our buds. Planted outside on its own roots, or on the briar, the Maréchal is a great failure, something like outdoor Camellias —a heavy dew, let alone a rain, browns the outside petals, so that there is seldom one to cut. A sort of coping or some other kind of protection may remedy this, but not if it is worked on the briar, as it makes, itself, more sap and wood than the briar does.—J. FLEMING, *Cliveden.*

SUBURBAN GARDENING.

JUNE.—For weeks past, it has been a very trying time for Gardeners. There has been a long spell of dry weather, with persistent east winds of a retarding and parching character—so much so, that things have grown very slowly indeed, and gardening operations have fallen much into arrears. Gardeners of all degrees have longed earnestly for rain, and as we write, there are not wanting evidences that the wished-for rain is near. The season is nearly a month behind, but if only a good rain should fall, Nature will make great haste to retrieve lost time.

Kitchen Garden.—The *Pea crops* must now be attended to, using the hoe between the rows, drawing the soil up to the plants, and staking such as need it. *Broad Beans* are very backward, but as soon as the plants are forward enough and in bloom, the tops should be pinched out, to cause the pods to swell. The hoe should now be constantly in use, especially amongst *Potatos*, earthing-up the rows as required. As the crops of *Winter Lettuce*, *Spinach*, *Cabbage*, &c., are cleared off, the ground should be dug and manured for immediate cropping. A good gardener rarely allows any part of the kitchen garden to be vacant for any length of time. A good kitchen gardener states that "a smooth surface, unless for seed-sowing, is to be wholly avoided. At all times, when the weather allows, the hoe should be kept in motion among the crops, to open up fresh raw portions of the soil to the pulverising action of the atmosphere, in order to admit the air and moisture freely into the mass. This practice is most beneficial to the luxuriant growth of all vegetables, is opposed to the growth of weeds, and acts with terribly destructive force against the health, comfort, breeding, or thriving of all vermin, preventing any of them from making their home about the crops."

Where space is available, successional sowings should be made of *Peas* and *French Beans*, *Lettuce*, *Radishes*, *Mustard* and *Cress*; and *Cabbage* and *Cauliflower* for autumn cutting. *Lettuces, Kales*, *Brussels Sprouts*, &c., should be planted out in showery weather; and the early crop of *Celery* put out in the trenches.

Fruit Garden.—In relation to this department, we have little to add to the directions given last month. In the case of *Wall Trees*, the young shoots should be nailed in when sufficiently advanced, and useless shoots removed, so as to admit light, air, and sun to the fruit. The gardener should war against the green and black-fly, using a good remedy to extirpate these pests. For beds of *Strawberries*, a liberal dressing of soot will be found an excellent fertiliser; as soon as the fruits of the earlier varieties begin to swell, clean straw, old hay, or short grass should be spread between the rows, in order to keep them clean. Any young suckers that may thrust themselves up from the roots of fruit-trees should be at once removed, by digging down and cutting them clean away.

Flower Garden.—All *Bedding Plants* should be put out in the beds, without delay. Should the dry weather last, watering must be carefully attended to, and the hoe used as long as it can be applied. Any bedding-plants, such as *Verbenas*, &c., should be pegged down, as soon as the growth is sufficient to admit of its being done. When the bedding-out is completed, the greatest care should be taken to keep the grass-plat and walks as neat as posisible. *Annuals* should be thinned out in the borders, and a sowing made of any that will flower in the autumn and winter. All creeping and climbing plants should be kept well trained, so that their growth may be easily distributed over the spots they are to cover. The syringe and watering-pot should be freely used in dry weather.

Cold Frames.—The *Primula* family is one of the chief occupants of the cold frame now, and as the plants go out of bloom, they should be repotted and divided, where it can be done. All offsets that are only slightly rooted do best round the sides of the flower-

pot, as they root more quickly and freely in consequence, and grow into nice plants by the end of the summer, when they can be repotted. *Spring Bulbs* that have flowered in pots will be greatly benefited by having some of the surface-soil removed and fresh added, or else repotted. Nor must anything be left too long in a dry state; it is a common fault to neglect these subjects, and then the plants become weakened and die. *Auriculas* should be repotted as soon as possible, as they get a good start from being repotted early in the summer. A good syringing overhead is of great advantage to the plants during drying weather.

Greenhouse.—There are some amateur gardeners who have an attachment to hard-wooded greenhouse plants, that were greater favourites a few years ago than they are now. We may mention *Correas*, *Epacrises*, *Pimeleas*, *Chorozemas*, *Leschenaultias*, *Polygalas*, *Ericas*, &c., all of them very interesting subjects. At this season of the year, it is necessary to stop their gross shoots, in order to induce a branched and sturdy growth, and also to cause growth in the lower parts of the plants. The plants should be shifted as required, in order that the pots may be tolerably well filled with roots before the approach of winter. *Fuchsias*, *Pelargoniums*, *Calceolarias*, &c., should now be coming in, to make the house gay, with *Lilies*, *Petunias*, *Balsams*, &c., to follow. All quick-growing subjects need good supplies of water, to keep them vigorous and healthy.

Towards the end of the month, the principal part of the *New Holland plants* in cultivation may be placed in a shady situation in the open air, where they can mature and ripen their growth. They are better fitted for winter confinement, when treated in this way. Care must be taken that the plants are thoroughly attended to in the matter of water, and precautions taken to keep worms out of the pots.—SUBURBANUS.

GARDEN GOSSIP.

WE are glad to learn that the GARDENERS' ROYAL BENEVOLENT INSTITUTION is about to make an attempt to increase the amount of the pensions granted, to £20 and £16 respectively. A strong effort is to be made to increase the funded property to such an extent as to permit of this increase being made. One means which it is proposed to adopt is to raise a fund, to be called the Gardeners' Benevolent Pension Augmentation Fund, to be kept separate and distinct from the General Fund, and to be invested till the Committee shall find themselves in a position to make the augmentation alluded to. To make a beginning, it is proposed that a collection be made in every garden and horticultural establishment of the country on Saturday, July 30th next. If every one will make a point of giving what he can afford, if it be only a "mite," such a collection would greatly help forward the object in view.

— THE next exhibition of the ROYAL NATIONAL TULIP SOCIETY is announced to be held at the Manchester Botanical Garden, in connection with the Great Horticultural Show of the Royal Botanical and Horticultural Society, on June 8th, the Wednesday of the Whitsun week. The schedule of prizes may be had on application to the Hon. Treasurer and Secretary, S. Barlow, Esq., Stakehill House, Castleton, near Manchester. The schedule extends to nine classes for rectified Tulips, and four classes for breeders. Certificates of merit will be awarded to rectified seedlings of any class which may be considered worthy.

— THE Annual Exhibition of the PELARGONIUM SOCIETY is fixed to take place on June 28th and 29th, in the Garden of the Royal Horticultural Society, South Kensington. In respect to this exhibition, we are requested to state that although the prizes offered by this Society are open to competition amongst the *members of the Society only*, that rule does not apply to the Society's honorary award of the Certificate of Merit, which is open to members and non-members alike. Seedling Pelargoniums will be adjudicated upon by a special committee of the Pelargonium Society, at meetings of the Royal Horticultural Society at South Kensington, on June 14th, June 28th, and July 12th. Forms of entry for seedlings may be obtained from the Honorary Secretary, Mr. Shirley Hibberd, 15 Brownswood Park, London, N.

— REPLYING to some strictures on the PROPERTIES OF FLORISTS' FLOWERS, by a writer in the *Gardeners' Chronicle*, Mr. E. S. Dodwell remarks that when it is assumed, "The points of a good flower are 'arbitrary,' then the florist must part company. Forty years ago, the florist was probably open to the reproach of the outsider that his 'properties' were dogmas, and sometimes inconsistent with intelligent interpretation; but that remark has been long removed. In 1847, the late Mr. Geo. Hardy, popularly known as "Dr. Hardy," did for the Tulip, by his paper in *The Midland Florist*, what in 1849 the late Rev. George Jeans, by his 'Essays on the Philosophy of Florists' Flowers,' published in the *Florist* of that year, and republished in the same work in 1878, did for all flowers, that is, demonstrate with unanswerable force, that for the preference of the florist there is ever a reason to be found in Nature, whilst every preference lacking such base has speedily passed to the limbo of untenable things. The writer of the paper to which I am, referring tells us 'The florists lay down a standard, and one to whose advantage outsiders are largely disposed to assent; that they cannot fully do so arises from the fact that the florists, as a rule, do not give us the reason why.' Mr. Horner, he says, 'very clearly laid down' the points of the Auricula, 'but their title to acceptance was not so fully pressed home.' Mr. Horner is more than able to hold his own; but I am surprised to be told his arguments did not press home. From the opening paragraph on the properties of the Auricula—the 'mossy eye,' to the one word 'balance,' into which he gathers all, Mr. Horner's lecture bristles with reasons, illustrative and explanatory. Mr. Horner may well have assumed, I think, that fundamental principles might be taken for granted, and that in the case of the Auricula he had only to show how they applied. That, I think, he did most completely. In the case of the Auricula, Mr. Horner did demonstrate 'why such and such a form is to be accepted as the ideal;' why 'it is the form

best adapted for its purpose'—'the one best calculated to please the eye of man.' If it be the opinion of the writer that this was not so, will he show what other form he would choose, and paint the ideal more pleasing to himself? I heartily agree with him that 'Nature's resources are illimitable; she knows nothing of hard-and-fast lines; her forms are the highest types of beauty, and they are so because they are the manifestations of intelligence, adaptation, and purpose;' but where does he find his warrant for calling upon the florist, as he does in his succeeding sentence, 'to show that the rules he lays down are an improvement upon those in accordance with which Nature herself works'?—intimating until that be done, he cannot look with respect upon his 'points,' or assent so fully to them as the specialists do. Never was so paradoxical a requirement made from man. If the writer had given any study to any one florist's flower, he would know the florist succeeds only, and knows he succeeds only, when he strictly follows Nature. He asks only that by patient, watchful, intelligent direction, he may be allowed to wait upon his mistress, and that in return for an intelligent interpretation of her purposes, she will from time to time reward him with new beauty from her rich and illimitable storehouses. 'Be as much like Nature to them as you can,' said Mr. Horner, in his instructions for growing seedlings, and in this direction you have embodied the very germ of a florist's creed."

— "HORTICULTURAL BUILDINGS," by F. A. Fawkes (London: Batsford, 52 High Holborn), is the title of a book which has recently been published, and which we look upon as a valuable contribution to horticultural literature—all the more valuable, in that the subject is one upon which, important though it be to those who are engaged in horticultural pursuits, no handy book of reference existed. The book treats of the construction, heating, and interior fittings of the buildings, and comprises also remarks on some of the principles involved, and the methods of applying them. The subject is thoroughly, fairly, and competently handled, so that the book will be likely to occupy a useful place in the garden library. There are numerous illustrations distributed through its pages. The advice to amateurs will be especially useful in assisting them to arrive at sound conclusions when dealing with this subject of building glass houses.

— THE beautifully and distinctly variegated West African DRACÆNA GOLDIEANA, introduced in 1872, and which passed from the Glasgow Botanic Garden into the hands of Mr. Bull, of Chelsea, flowered in February last at Marseilles, in the garden of Mr. Renouard. Its claim to be a true Dracæna was long disputed, though Mr. Baker, in his revision of the Liliaceæ, did not hesitate to place it near to D. elliptica and densiflora. An engraving and detailed description are promised in the *Belgique Horticole*.

— THE new RHODODENDRON DAVIESII, recently exhibited at the spring flower-show of the Manchester Royal Botanical and Horticultural Society, and awarded a First-class Certificate of Merit, was raised by Mr. Isaac Davies, Brook Lane Nursery, Ormskirk. The colour of the flowers is a bright orange-scarlet, exactly the colour of glowing fire. Mr. Davies is well known as the originator of many valuable varieties of Rhododendrons and Azaleas, having devoted his attention for many years past to the hybridising of this showy and interesting family.

— IN the PELARGONIUM named HENDER'S CRIMSON VESUVIUS, we have another "eruption" or evolution from the old sportive Vesuvius, which already includes a scarlet, a salmon, a white, and a striped form. This novelty has the flowers of a crimson-scarlet, many shades deeper in colour than the original, and the plant is stated to be of an equally good habit. The colour is very rich and bright, as the samples which were sent to us fully testified. The owners, Messrs. Hender and Sons, of Plymouth, regard it as the best bedding zonal which has ever been sent out.

— THE *Journal des Roses* gives two receipts for destroying the MILDEW of ROSE-TREES. The first is from M. Verdier. It recommends to boil for ten minutes 500 grammes (about 17½ oz.) of flowers of sulphur and an equal quantity of lime, in 6 litres (about 5¼ quarts) of water, often shaking the mixture. This solution is allowed to settle, and afterwards put into well-corked bottles. When required for use, 1 litre (about 1¾ pint) of this composition is put into 100 litres (about 21⅞ gallons) of water, and the rose plants are syringed with the mixture. The second is that of the Comte de Buisson, and is of the most simple character; 2 or 3 grammes (about 1/7 or 1/7 drachm) of sea-salt is dissolved in 10 litres (about 2 3/16 gallons) of water, and the foliage of the rose plants on both the upper and under sides is syringed with this solution.

In Memoriam.

— MR. ROBERT BENBOW, manager during the last six years of the seed department at Mr. B. S. Williams', Victoria Nursery, Upper Holloway, died on May 5th, at the age of 41 years. Mr. Benbow had acquired a thorough knowledge of his business in the establishments of Messrs. Oldroyd, Sutton and Sons, and Waite Burnell and Co.; and was gifted with an amiable disposition, and an unassuming gentleness of demeanour. He has left a widow and three children.

— MR. ANDREW TOWARD, of Amherst Villa, Newport, Isle of Wight, died on May 7th, at the ripe age of 85 years. He was scarcely known to the present generation of gardeners, but in his younger days held the prominent position of gardener to the late Duke and Duchess of Gloucester, at Bagshot Park, Surrey. At that time, Bagshot Park was a well-known centre of good gardening, and Mr. Toward was recognised as a successful practitioner of the art. Amongst the old-fashioned Pelargoniums, one called Bagshot Park Seedling, a cut-leaved sort, with pretty, but small, bright pink flowers, was raised by him. Mr. Toward's services were subsequently transferred to the Royal residence at Osborne, where for thirty-nine years he held the position of land steward to the Queen and the late Prince Consort, by whom his long and faithful services were highly valued. He had, under the direction of the Prince Consort, executed the entire laying-out of the grounds, gardens, roads, and plantations at Osborne. Sir John Cowell, by command of the Queen, attended his funeral, which took place at Whippingham Church. Mr. Toward was of Scotch lineage, and was, during his long life, held in the highest respect and esteem by all who knew him.

W. H. Fitch. del.

Chromo F. Stroobant

Clematis Belle of Woking

CLEMATIS BELLE OF WOKING.

[PLATE 541.]

OUR figure of this handsome double-flowered Clematis was made by Mr. Fitch, some three or four years ago, when the Belle first flowered as a seedling. She has now, in the ordinary course, advanced to that stage when she has to be introduced into society, and we take this as an opportune moment for publishing her portrait. The Belle of Woking was obtained by Messrs. George Jackman and Son, of Woking Nursery, and appeared to us, when originally bloomed, to be a very distinct and meritorious variety, and a decided acquisition to the double-flowered section; since then the plant has been under "nursery" manipulation.

The double-flowered varieties of Clematis all belong to the spring-flowering division, and hence are better adapted for indoor than for outdoor planting. They are well suited for covering pillars or trellis-work in cool conservatories or in glazed corridors, and, like all the early bloomers, flower from the well-ripened wood of the preceding season. Hence a few strong young shoots should be encouraged to grow annually, and these should be ripened thoroughly, and in winter be trained to replace the older exhausted ones, which may be cut away. Thus kept in a vigorous state by moderate pruning and judicious feeding, they will vindicate their right to occupy a prominent position in the floral arrangements of our cooler plant-houses and conservative walls.

We quote the original description of the Belle of Woking from the *Clematis as a Garden Flower*, by Moore and Jackman, an exhaustive treatise on the cultivation of these showy flowers, which are valuable, on the one hand, for their noble blossoms in spring, and equally so, on the other, for their continuous blaze of colour during the summer and autumn:—

"CLEMATIS BELLE OF WOKING, *Jackman.*—A fine new double variety of the florida type, obtained from *C. lanuginosa candida,* crossed by *C. Fortunei.* The leaves are ternate; the leaflets rather small, ovate, and rugose. The flowers are double, with about eight series of sepals, and a small tuft of stamens; they are upwards of 4 in. across, with the general outline of the Duchess of Edinburgh, the sepals obversely lanceolate, acuminate at the apex, and narrowed below into a stalk-like base, forming a close rosette of about 3 in. in depth. The colour is a charmingly delicate, but decided tint of bluish-mauve, or silver-grey, the innermost sepals having here and there a dash of reddish-lilac, which is not very obtrusive; the filaments are white, supporting cream-coloured anthers. The uppermost or bracteiform leaves, just beneath the flowers, are simple, varied in form, and more or less coloured, as often occurs in the double-flowered varieties. It is a decided acquisition, finely contrasting with the Countess of Lovelace, on the one hand, and the Duchess of Edinburgh on the other."
—T. MOORE.

ON PERFECTION OF FORM IN THE TULIP.

"IT is now conceded on all hands that no Tulip can be perfect in form which does not expose the whole of its inner surface at a glance. Hence it follows that the shape of the cup must be circular in its outline, because every other form would throw more or less shadow over the surface, and thereby obscure the brilliancy of its colours. Other advantages will also be found in its superior gracefulness, and its more perfect accordance with the arrangement of the coloured markings. Strict attention to these two points is, therefore, very properly enjoined by Mr. Glenny. With regard, however, to what is the proportion of a circle which would constitute perfection, further consideration is requisite. His arguments against the perfection of the half-circle are by no means conclusive, and several facts, bearing strongly on the question, appear either to have been overlooked, or not duly appreciated.

"The Tulip is a flower of simple construction, but remarkably well adapted to the display of those richly-coloured forms with which Nature has so liberally endowed it, and which render it so peculiarly attractive. These, in many of our best varieties, require a large surface for their full development. Hence size becomes an important accessory, and the superior advantage of the half-circle over the smaller one-third will at once be apparent, if we compare the relative sizes of the petals, in flowers of equal diameters at the opening or mouth, in both forms. In the half-circle, a flower of $3\frac{1}{2}$ in. diameter would have its petals nearly half an inch longer than those in the lesser form, which is an important difference.

"These brilliant forms, we should remember, are not confined to the interior of the flower. They are rich and beautiful on the outside also. This is the property which chiefly gives splendour to a tulip-bed, where, except for the purpose of ascertaining the peculiar merits of a variety, the inside is comparatively little seen. Even on the stage of an exhibition it is not the inside alone which secures the prize. A blemish on the outside, though not apparent within, is quite as prejudicial as if it were there situated. Indeed, in cold seasons, it often happens that the inside can scarcely be seen by the judges, and the character of the outside alone determines the relative merits of the whole collection. It is obvious, therefore, that the cup, or flower, ought to possess such a form as will enable us to see these external beauties fully displayed, as well as the internal. Here, again, the half-circle commends itself to our preference; for, in consequence of the more erect position and greater size of each petal, a much larger surface is presented to the eye, and feather and flame may both be seen at once; while if the form were only one-third of a circle, the latter would be comparatively small, and scarcely visible without turning up the under-side; and the whole flower would have so mean and insignificant an appearance as barely to be deemed worthy of cultivation.

"Mr. Glenny's objection to the half-circle, on account of its being too deep to reveal the internal beauties to the spectator at a glance, is altogether groundless. Whoever will take the trouble to procure an accurately formed hemisphere, made either of copper or any other material, will immediately be convinced of its fallacy; and, after what has been said against it, will be surprised that it should appear so shallow. For that portion of it which meets the horizontal at right angles is so small as scarcely to be discernible; and every part of the interior will be visible at once, without any shadow whatever, if it be turned properly to the light, and the eye brought in a line directly over the centre. There is no mistake about this; and the advantages of the half-circle, or globe, so greatly preponderate over those of every other form, that I have no hesitation in adopting it as the standard by which the form of every Tulip ought to be tested. Of course, I would not reject every Tulip which has not this form, for until it prevails much more extensively than it now does, we cannot afford to discard such varieties as *Charles X.*, *Shakespere*, *Bienfait*, *Roi de Siam*, *Heroine*, and *Aglaia*. These and many other even longer-cupped flowers will, in all probability, continue to be admired as long as Tulips exist. But, in order that the relative merits of every variety may easily be ascertained, it is important to know in what perfection of form consists, and I believe it is only to be found in the half-circle or hollow globe.

"Mr. Wood evidently takes the same view of it, for in his description of the Tulip, which appeared in the *Gardeners' Chronicle* (1845, p. 360), and which is highly creditable to his taste and judgment, he says:—'I would have the shape of the cup approach as near as possible the half of a hollow globe; if a trifle more or less, I should not object to it, only requiring that when in its prime the interior of the flower may be seen at a glance.' Indeed, Mr. Glenny himself seems more favourably disposed to the half-circle than he was, for in the *Gardeners' Almanack* (1847, p. 94), instead of condemning it as worse than the third of a globe, which he did in 1841 and 1843, he contends that 'one-third to one-half a hollow ball is alike good all through,' and further says that 'between these two extremes every shade is beautiful.' It is clear, however, that in laying down a standard of form for our guidance, one which admits of so much latitude of judgment is highly objectionable, for one of two different proportions must be wrong. If one-third of a hollow ball be perfect, the farther we depart from that form, in either direction, the more imperfect will the proportion become; and one-half of a ball must, therefore, be as imperfect a form as that which is almost flat. It is not enough to say that 'one-third to one-half is alike good all through;' or that 'between these two extremes every shade is beautiful.' In defining correct forms, it is our duty not to confound that which is beautiful merely with that which is perfect; and I believe it impossible to induce many to acknowledge the third of a hollow ball as the true standard of form for the Tulip. Indeed, it is rather surprising Mr. Glenny should ever have required us to do so, for if we refer to the *Gardener and Practical Florist* (1843, p. 4), he there distinctly tells us, in reply to the inquiry, 'Who ever expects to see a tulip like the third of a hollow ball?' that 'the constitution of a Tulip forbids it.'"—G. W. HARDY, *Warrington.*

(*To be continued.*)

ROSE PERLE DES JARDINS.

THIS beautiful Rose is one of the best of the yellow Tea-scented varieties, and is deserving of the most extensive cultivation. The flowers are large, full, and well formed. The colour under bright light is a beautiful pale yellow, and under slight shade a deep golden-yellow. Planted under glass, and trained up walls or trellises, these Tea-scented Roses will furnish a succession of beautiful flowers from spring to autumn. They grow and flower freely in the open ground, but under such circumstances should be well protected during the winter. A rich, warm, dry soil is necessary, to grow them to perfection.—M. SAUL, *Stourton Castle, Yorkshire.*

IMANTOPHYLLUM MINIATUM.

OF this well-known and glorious plant there have recently been figured some new and improved varieties, of which that named *Marie Reimers*, figured in the *Flore des Serres*, and which, according to M. Planchon, is the same as that called *Lindeni*, is a good example. Another, called *Madame Legrelle d'Hanis*, has been illustrated by a coloured figure in the *Revue de l'Horticulture Belge*. The accompanying woodcut represents the habit of growth of this latter variety, and affords us an opportunity, thanks to M. Pynaert Van-Geert, of quoting from the publication just referred to, his account of some of the novelties above mentioned:—

"The *Clivias* [*Imantophyllums*] flower more than once a year; and as fertilisation is easily effected, each bouquet of flowers gives place, in autumn, to a magnificent umbel of fruits, which are sometimes roundish, sometimes ovoid, according to the variety, and which, being of a beautiful yellow or red colour when approaching maturity, still add to the decorative effect of the plant.

"The following is an abridged description of some very deserving varieties which we have in cultivation:—

"*Ami Delrue.*—A very abundant-flowering plant, bearing superb, brilliant, magenta-red bouquets; the flowers large, in the style of those of *I. miniatum splendens*. It was raised by M. Jélic-Van der Noot, of Alost, who has devoted himself successfully for some years to the culture and improvement of *Clivias*.

"*B. S. Williams.*—A variety of great merit, and one which also recalls *I. miniatum splendens*, but which, by its rich flowering, leaves the

latter far in the background. The flowers are perfect in form, the divisions rounded, gracefully recurved, of a lively scarlet, with golden-yellow throat, shaded with orange. The mother-plant, at its first flowering, bore flowers more than 4 in. in diameter.

"*Madame Jélie-Van der Noot*—A remarkable and vigorous variety, near to *I. robustum*, but far surpassing it. The flowers are very large, measuring nearly 5 in. in diameter, shaded scarlet, washed with golden-yellow towards the base of the limb, each of the segments having in the centre a median plainly-marked stripe of golden yellow. Raised by M. Jélie-Van der Noot.

"*Madame Legrelle d'Hanis.*—This is relatively a dwarf plant, with numerous short, rather broad leaves. The flowers are from 3 in. to 4 in. in diameter, with wide, well-formed segments, in the colouring of which a fiery carmine-red has the predominance. This is a superior variety.

"*M. J. de Vénoge.*—A singular variety, with large flowers, 4 in. in diameter, perfect in shape. The colour is a brilliant carmine-red, washed with white, transparent white, pure yellow, and rosy-white at the lower part of the limb. The colouring of the blossoms of this variety is the farthest removed from that of the *I. miniatum* type.

"*Parkinsoni.*—Of stout dwarf habit, with leaves as broad as in *I. maximum*. The flowers are very large, very open, with regular well-formed and rounded divisions, of a rich fiery-red colour, sparkling at the upper part, washed with transparent white on the edges of the lower part, with a median band of golden yellow, sometimes shaded with rose. We have received this splendid variety, with several others, from M. Van der Swaelmen, who has dedicated it to one of his correspondents.

"We still possess a considerable number of unpublished varieties which have flowered a first time, and which promise to form precious additions to our winter garden flora.

"There is little to say on the culture of these plants, which are not difficult to satisfy, but accommodate themselves admirably to judicious treatment, and which reward a hundredfold, by the fulness and richness of their flowering, and by the luxuriant aspect of their abundant deep-green foliage, any care which may be bestowed on them. They are truly temperate-greenhouse plants—that is to say, they need no more heat than from 40 deg. to 45 deg. Fahr. in winter. A substantial soil, mixed with decayed manure and gritty earth, suits them better than peat-soil or leaf-mould. A thick bed of crocks at the bottom of the pots is a great preservative against over-watering, which sometimes happens in the winter. They, nevertheless, require frequent waterings during the season of their active growth.—ED. PYNAERT, *Gand.*"

NATIONAL ROSE SOCIETY.

THE Committee of the National Rose Society, which was founded in 1876, have issued the following appeal for additional support, which we commend to the notice of our readers :—

"As the National Rose Society has now been established for some years, and has commanded the support of most of the leading Rose-growers in the kingdom, both amateur and professional, the Committee think that the time has come when a forward stop should be made, by soliciting the support of those lovers of the Rose, and they are legion, who have not as yet become members of this Society. And in so doing they may, with justifiable pride, refer to the work that has already been accomplished, as entitling them to some claim on the additional assistance they are now so anxious to secure.

"At the time when the Society was first established, the interest of the public generally in the rose had materially declined. Rose Shows frequently extended over two days, and this seemed likely to become the rule rather than the exception; the prize schedules were often quite unworthy of our national flower, and it was altogether impossible to obtain united action in any matter connected with its culture and exhibition.

"The Committee therefore felt that if an interest in the Rose was to be revived and sustained, it would be necessary, in the first place, to hold good exhibitions. Accordingly, those they have hitherto organised, have been always on the most liberal and comprehensive scale. Their first exhibition, which was held at St. James's Hall, London, although, unfortunately, a failure financially, will be long remembered for its surpassing excellence. As, however, this attempt at holding an independent show was not such as to encourage a repetition of the experiment, arrangements were entered into with the Crystal Palace Company, whereby the Committee were released from much pecuniary responsibility. There, no doubt, exists a strong feeling that independent shows are to be preferred; but until the Society receives more general support, the Committee feel that they will not be in a position to undertake them. Unfortunately, three very indifferent Rose seasons have succeeded one another, and, although the schedules have been most liberal, and have included many valuable special prizes given by friends of the Society, the exhibitions themselves have not been such as they may, under average conditions, reasonably expect to see.

"In order to extend the interest in the flower, and give Rose-growers in the northern counties an opportunity of exhibiting somewhat later in the season, arrangements were made with the Botanical and Horticultural Society of Manchester, by which the Society has been enabled to hold exhibitions there for the past three years. But as other large towns have also requested the presence of the Society, the Provincial exhibition will be held this year at Sheffield, and next year at Bath.

"It will thus be seen that an earnest endeavour is being made to extend the interest in the Rose all over the country; an interest which is still further encouraged by the fact of the Committee having had medals prepared, which are given to those Associations who affiliate themselves to the parent Society. Since the National Rose Society was founded, several new Rose Societies have sprung into existence, and it is noteworthy that in every instance the Committees of these new associations have

placed themselves in communication with this Society, asking for advice and assistance.

"The Committee have, however, felt very strongly that there were other methods open to them whereby they might further show the value of the Society. For instance, being frequently appealed to in the matter of judging, they drew up a set of rules, which have already been widely distributed, and very generally adopted. They have also issued a short paper, containing a series of 'Practical Hints on Rose-culture,' and they are at the present time engaged upon the somewhat difficult task of preparing an authorised descriptive Catalogue of Exhibition Roses, which they hope may serve as a guide, both to growers and exhibitors.

"The number of members is now about 370, but the Committee do not consider that this at all adequately represents the number of those interested in the welfare of the Queen of Flowers, and they therefore confidently hope that many others may be induced to join the National Rose Society. It should be borne in mind that those who become members will, among other advantages, be entitled to a liberal supply of tickets for the Society's exhibitions."

During the present year, the Society will hold three exhibitions, namely:—At the Crystal Palace, Sydenham, on July 2nd; at Sheffield, on July 14th; and at Manchester, on August 24th. The Honorary Secretaries are the Rev. H. Honywood d'Ombrain, Westwell Vicarage, Ashford, Kent; and Edward Mawley, Esq., Lucknow House, Addiscombe, Croydon.

NOTE ON HARDY RHODODENDRONS.

AS a postscript to the list given at p. 81, we desire to add the names of a few other good and perfectly hardy varieties of Rhododendrons. At the same time, we would take the opportunity to correct a *lapsus calami*, through which we have included, in the article referred to, the names of a few varieties which had been noted for other qualities than their endurance, and for the complete hardiness of which, in adverse seasons and under adverse circumstances, we do not vouch. This remark refers to the varieties named Agamemnon, Charles Fisher, Helen Waterer, Lady Grey Egerton, Lucretia, Michael Waterer, and Mrs. G. W. Heneage.

Those which we desire to add as good fine-foliaged and perfectly hardy sorts, are the following:—

Charles Dickens.—Fine habit and foliage; flowers dark scarlet.

James Bateman.—Fine habit; flowers clear rosy-scarlet, of perfect shape.

Lady Annette de Trafford.—Fine habit; flowers cream-colour, with distinct chocolate blotch.

Marchioness of Lansdowne.—Very distinct and telling; flowers pale rose, with intense black spotting.

Othello.—Fine habit; flowers crimson, with a tinge of mauve-purple, very conspicuous.

In the list previously published, Sir J. Sebright is a misprint for Sir Thomas Sebright. —T. M.

DOUBLE PYRETHRUMS.

FROM the time the late John Salter brought these useful flowers into notice, I have grown them extensively, and my interest in them is not less than it was at the first. I value them for the splendid form and the attractive colouring of the flowers, but their greatest recommendation to the general body of cultivators will probably consist in the fact that during the months of May and June they produce a display of flowers in the open borders that nothing of the class can equal. During the greater part of May and June, my borders were resplendent with colour; we had glorious masses of crimson, rose, and purple, with pure white, and several exquisite shades of blush, pink, and sulphur, and July will be well in before there will be a material decrease in the brilliancy of the display. Indeed, the Pyrethrums need only to be well managed to continue gay the whole season through. Neither winter nor spring frosts are injurious to them, and drought has but little effect upon them when occupying well-prepared borders.

It may well be asked why plants so hardy and attractive as these are not generally grown? The answer is that they cannot well be employed for bedding, and consequently have received but scant attention. They bloom at an awkward time for those who devote the whole of their beds and borders to the spring and summer bedding-plants; that is to say, they are at their best in the period between the two displays, and interfere with both; but it is at a time, nevertheless, when flowers are much wanted. Moreover, they succeed exceptionally well in town gardens, and are free from the attacks of insect pests.

The spring and autumn are the seasons in which it is generally supposed they can be planted with the greatest degree of success, but they can be planted in the summer with a full assurance of their doing equally well, and by thus planting them a whole year is practically

gained; for plants put out in the early summer, however small, will at once begin to grow freely, and by the autumn they will have acquired a sufficient degree of strength to endure the winter unhurt, and also to produce a good display of bloom in the season following. Those planted in the autumn, on the contrary, will only be able to become established by the winter, and consequently will not be strong enough to do more than bear a few flowers of indifferent quality. The plants must, of course, when purchased be in pots; but as stocks are kept at the nurseries, no difficulty in procuring them is likely to arise. There is no occasion to clear the border previous to putting them out, as they can be arranged between the bedders without their interfering with the appearance of the border or being injured by the subjects with which they are associated. In a general way, the greatest amount of satisfaction is likely to be derived from large clumps distributed at regular intervals.

A moderately deep, fairly rich, and well-stirred soil is not less advantageous to the Pyrethrums than to hardy herbaceous plants generally, and in planting them amongst other subjects the soil at each station should be broken up to a depth of not less than 12 in., and a little manure should be incorporated with it. In the matter of planting, care must be taken to have an equal distribution of the several colours throughout the border, and if large masses are wanted the first season two or three plants may be put out at each station; but in a general way, when planting is done in the summer, one will suffice, as they attain a large size by the autumn and bear a goodly number of flowers in the season following. When once planted they can remain undisturbed until they have become too large or, as shown by their weakened growth, the soil has become exhausted. When either event happens, the proper course will be to lift them with a fair amount of care, divide them into two or three portions, and then enrich the soil with some fertiliser and replant, or to plant them elsewhere.

In making a selection, much care is requisite, owing to a considerable number of the varieties being too much alike to render them desirable in the same collection. The following have been chosen with due regard to distinctness as well as to the size and shape of the flowers, and fairly represent the several colours afforded by the Pyrethrums:—

Aurora, creamy-white, yellowish in the centre, and very pleasing.

Boule de Neige, white, delicately tinted with rose.

Brilliant, rose-purple, rich and telling.

Candidum plenum, pure white, and most useful for furnishing cut flowers.

Captain Nares, bright crimson, effective and of fine quality.

Chamois, yellowish-buff, useful for its distinct colour.

Comte de Montbron, rose-lilac, very beautiful.

Émile Lemoine, purple-crimson, the florets tipped with gold, very effective.

Floribundum plenum, bright pink, free and fine.

Gloire d'Italie, carmine-purple, a very effective shade of colour.

Haage et Schmidt, rich carmine, the centre rose shading to white.

Hermann Stenger, rich lilac, free and effective.

La Vestale, white, flushed with lilac.

Le Dante, bright rose, yellowish in the centre.

Madame Munier, blush-tinted rose.

Michael Buchner, rich crimson, with orange centre, a brightly-coloured flower of superb quality.

Mrs. Dix, rose, flushed with purple.

Mons. Barral, rose-red, very effective.

Niveum plenum, white, very fine.

Paul Journu, delicate rose, with pale yellow centre.

Prince of Teck, bright crimson, very rich in colour, and of excellent quality.

Rembrandt, rosy-purple, valuable for its colour.

Roseum plenum, blush-shaded rose.

Rubrum plenum, rose-purple, with bright rose centre.

Solfaterre, creamy-white, with bright yellow centre.

Triomphe de Mai, light lilac, very pretty.

Wilhelm Kramper, deep red, rich in colour and of large size.

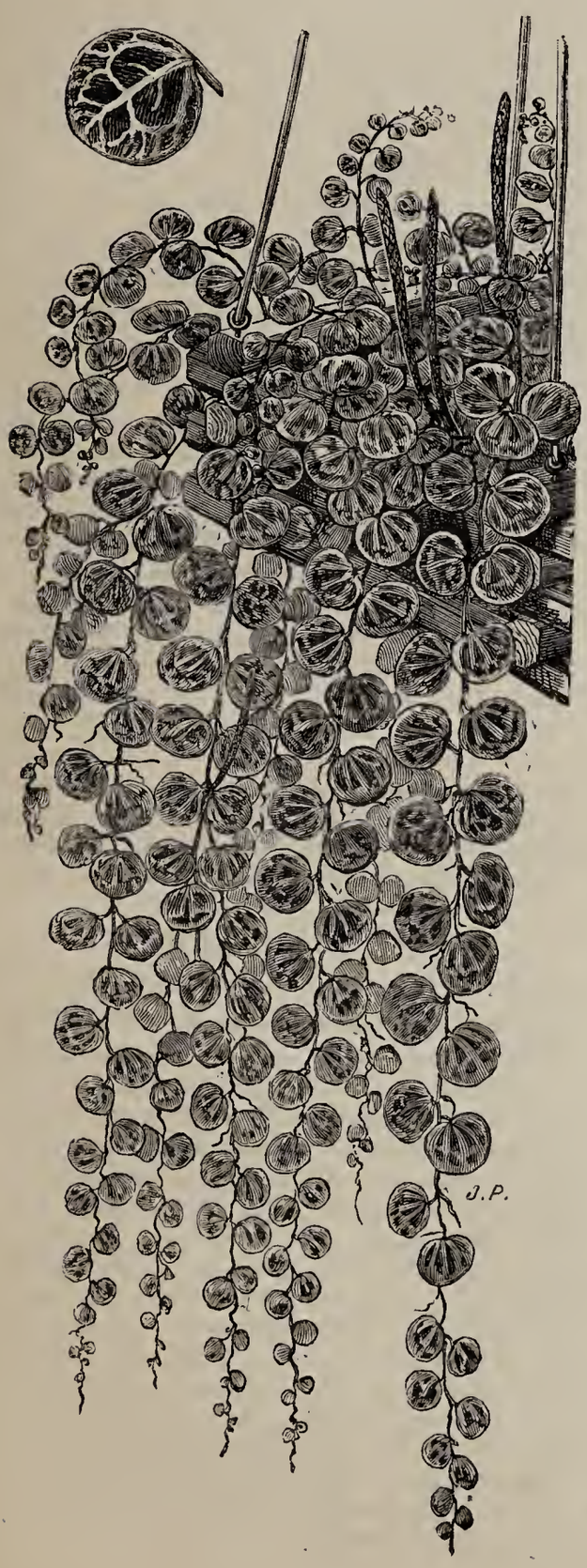
—J. E. S. (*Abridged from the Gardener's Magazine*).

PEPEROMIA NUMMULARIFOLIA.

THIS pretty little basket-plant has been cultivated and distributed by Mr. B. S. Williams, of Holloway, under the name of *Peperomia prostrata*. It was, however, exhibited by the late Mr. W. Wilson Saunders, so long ago as 1866, at one of the meetings of the Royal Horticultural Society, and is thus referred to in the Society's *Journal* (i. p. vi.):—"In the same group was a little creeping *Peperomia* (*nummularifolia*), which had inadvertently turned up among some of Mr. Weir's Brazilian Orchids, and, which, owing to its pendulous habit, though a mere stove weed, may doubtless be used with advantage in the ornamentation of hanging baskets, its thread-like branching stems being furnished with pale-green, roundish-oval leaves." It does, in fact, form a very neat and pleasing plant for small baskets, and though its flowers are

simple, collected into short erect cylindrical aments, its foliage is really pretty, the upper surface being marked with distinct white veins, as shown in the accompanying figure, which represents Mr. Williams's plant.

This *Peperomia* occurs in many parts of South America, and in the West Indies, and was named *Acrocarpidium nummularifolium* by Miquel. The filiform stem is rooting, the leaves thick and fleshy, and the amentiferous branches from an inch to an inch and a half long. The plant being slender-growing will form an elegant and welcome addition to the subjects adapted for growing in suspended baskets. It, of course, requires stove heat.—T. Moore.



GREENHOUSE RHODODENDRONS.

THE *Rhododendron arboreum* and its varieties may be considered the most gorgeous-flowering plants of the early spring season; and when abundantly supplied with water (and if planted out, a hollow should be formed around the base, in order to conduct the water to the ball), the flowers last a month or five weeks in beauty. One fine variety here, which is the darkest-coloured I have ever seen, has been, this year, a splendid sight. The plant is 45 ft. in circumference, and 11 ft. high, and had 600 bloom-heads open at one time; but as cultivators will know that these plants do not flower every season in the same profusion, it will probably not have half so many next year; nevertheless, even that lesser number would be worth looking at. The wonder is that one sees these splendid Rhododendrons so seldom. The Messrs. Downie and Laird, of Edinburgh, maintain a fine collection of these Indian Rhododendrons, and a solitary one may be seen now and again in private gardens; but, as a rule, they are rarer than most other species of plants. Like Azaleas, at this season they like warmth and moisture, not only for the proper development of their flowers, but for the maturation of their growth for next year's bloom. During summer, a watering or two of weak liquid-manure will be very conducive to their well-being, or what is quite as good, or perhaps even better, a top-dressing from a spent mushroom-bed. We generally fill up the basin that is formed for watering with this material, which seems grateful and refreshing to them during summer.—H. K., *Floors*.

MARQUIS OF DOWNSHIRE PEACH.

I SHOULD be glad to learn if there really is such a Peach as Marquis of Downshire. I cannot find the name in the Fruit Catalogues, but received a tree under that name from a large nursery firm. It is fruiting freely,

but in every way appears identical with that very handsome, well-known Peach, the Violette Hâtive.

We know soil and general treatment have much to do with the appearance and quality of fruit, but before cultivators attempt to give a name to any kind which they cannot identify with the original, they should exhaust every means to ascertain what it really is. It is misleading, and is sometimes damaging, to be deceived by supposititious names.—M. TEMPLE.

*** The Marquis of Downshire Peach was a seedling raised and sent out by Mr. John Standish, during his residence at Ascot, and was, we believe, one of the original seedling trees with which an experimental peach-house erected there was planted. We do not find any particulars as to its history, or when it was sent out; but in the *Gardeners' Chronicle* (1870, p. 1506) we find the following note from the late Rev. W. F. Radclyffe:—"Mr. Standish kindly presented me with one tree of each [Early Ascot and Marquis of Downshire]. They were planted near together on a wall facing south. My garden, being exposed, is late. The Early Ascot was ripe August 26th, the Marquis of Downshire coming on a fortnight later. The habit and appearance of the last-named tree are exactly like the Royal George, but the Marquis has glands, and the Royal George has none. The fruit of the former is an elongated round, while that of the latter is a flattened round. . . . . If my Marquis of Downshire is correct, it is not as early as the Early Ascot. Mr. Standish states that Marquis is superior to the Early Ascot. At present, I cannot agree with him; it is, however, a very good peach, and a great bearer."—ED.

PELARGONIUMS INDOORS AND OUT.

GREAT praise is due to those who have improved the important breed of Dwarf Pelargoniums, by adding fine foliage to what had been already attained in the way of flowers, for not only has the colour been attended to, but the form of truss, its carriage above the foliage, and its stiff habit of growth, so that few things tell better during the summer season than these Dwarf Pelargoniums. It is sometimes, however, a mistake to mass them in large beds, for whilst they may be elegant in ribbons and narrow strips, they may be clumsy in broad areas; and when the bed has breadth, it is length of leg that is needed in the plants, so as to raise the bed with plants and not with earth, as we too often see done.

This brings us to another class of scarlet Pelargoniums, viz., the tall-growing or long-legged ones. I was once very much surprised, on entering a flower-garden, to see tall, compact scarlet Pelargoniums dotted about the ground, standing nearly a yard high, and blooming freely. On inquiry, I found that these dots were made up of two scarlet Pelargoniums planted back to back, and tied to look like one, and that they were taken up, of course, every autumn, and housed in good time in the greenhouse.

In my first situation I had charge of a greenhouse, called by courtesy a greenhouse conservatory, in which the plants had been planted out some twenty years before my time. Two plants had been put in to terminate the vista of this long greenhouse, and these were a broad-leaved Myrtle, which had passed the size of a bush, and had a trunk like that of a small tree; and a scarlet Pelargonium. These two divided the honours between them, for while the Myrtle, with its tiny white flowers, made no display as a flowering plant, its dark-green foliage, sweetly-scented, formed a delightful background, and when the tall, rambling Pelargonium intruded its gaudy trusses of flowers across the Myrtle, it showed, on entering the house, as one plant. These two had been culled from and cut at all seasons, for the warm, close atmosphere of the greenhouse suited the flowering of this kind of Pelargonium, which was little short of 9 ft. in height, and as much across.—ALEX. FORSYTH, *Salford.*

ONION-KEEPING.

IT is not generally believed that Onions, if kept dry, will stand any amount of frost, and keep sound and good until very late in the season, even if the weather has been severe. This season the larger portion of our stock was hung in bunches in an open shed with a slate roof, and having the open side exposed to the north. The thermometer was more than once as low as zero, and now (May 18th) a number of the Onions which are left are solid, sound, and good. They are, however, milder in flavour than usual. The samples average 12 in. to 14 in. in circumference, and are composed of Brown Globe, White Spanish, Bedfordshire Champion, Reading, and others. Thorough ripening, and due precaution used to prevent a second growth, are essential points, when Onions are to be kept late.—M. T., *Impney Hall Gardens.*

W. H. Fitch, del.

Chromo. P. Strobant, Chenr

Cherry St. Margaret's.

ST. MARGARET'S CHERRY.

[Plate 542.]

"I CONSIDER the St. Margaret's to be one of the best and most useful varieties of Cherry in cultivation. The tree is a vigorous grower, and has a strong, hardy constitution. It is also an excellent bearer, and the branches are not so liable to die off as they are in some other kinds. The fruit is large, handsome, and of good flavour. But perhaps the chief merit of this variety is its coming in when nearly all other Cherries are over. It is late in ripening, and hangs well on the tree for some time after it is ripe. I have gathered fruit from a tree on a west wall at the end of August, and have no doubt that if it were grown on a north wall along with the Morello, its season could be further prolonged."

For the above remarks on this beautiful Cherry, and for the sample represented in the accompanying plate, we are indebted to Mr. John Woodbridge, who so ably directs the ducal gardens at Syon House, Brentford. Mr. Woodbridge grows the St. Margaret's Cherry with very marked success, and finds it exceedingly useful as a late dessert fruit, for which it is well fitted, on account of its large size, its handsome appearance, and its excellent quality, in which particulars it takes rank with the Black Tartarian and the Bigarreau Napoléon.

M. Leroy, in his *Dictionnaire de Pomologie,* adopts for this Cherry the name of Gros Bigarreau Noir. It has, besides, many other synonyms, amongst which occur Elk-horn, Large Black Bigarreau, and Tradescant's Heart, the latter adopted by Dr. Hogg. Leroy describes it being of first-rate quality, and of the largest size, inconstant in form, often very obtusely cordate, or irregularly globose, with a broad and shallow suture. The slender fruit-stalks, which are set in a shallow cavity, are rather short, seldom exceeding $1\frac{3}{4}$ in. in length; the colour of the skin is of an intense purple-red, becoming nearly black when the fruit is fully ripe; the flesh is violet-red, firm and crackling, with an abundance of sweet juice, having a slightly acidulous and very agreeable flavour; the stone is rather small, ovoid, pointed.

"Like the Gros-Cœuret," observes M. Leroy, "the Gros Bigarreau Noir was, from its most ordinary form and for its colour, primitively called Cœur-Noir (Black-heart) and Heaume-Noir (Black-helmet). Estienne, the first author who characterised it (*Seminarium,* p. 78), named it thus in 1540, observing that it was much spread over the orchards of Anjou, of which it is probably a native, since it still bears in the markets the surname Bigarreau de Saint-Land, recalling that suburb of Angers.

"This Cherry has often been confounded with the Gros-Cœuret, a name which Poiteau even applied to it in 1846, in his *Pomologie Française;* but this error would not be repeated so easily now-a-days, for these two varieties are well known by all nurserymen. Let us remark, however, that several synonyms are common to them,—Cœur, Cœuret, Heaume, and Ochsen."—M.

THE ROYAL NATIONAL TULIP SOCIETY.

THE annual exhibition of this Society was held on June 4th, at the Manchester Botanical and Horticultural Society's Garden, Old Trafford. The Show, which had been originally fixed for June 8th, had been necessarily put forward, in consequence of the hot forcing weather at the end of May. The show of blooms was a very good one, considering the lateness of the season and the sudden impulse given by the hot weather, and the display was larger than had been seen for years previously. The quality seemed to be about the average. The frost of last winter did not appear to have affected the Tulip bulbs, for the foliage was everywhere strong and healthy, and early in the season gave promise of a good, though late, bloom; but the hot weather which occurred during the three weeks preceding the Show had forced the bloom on so fast that several growers were out of first-class varieties, and consequently there were fewer pans of twelve staged than usual. A late season and hot May sun have a tendency to make the marking and delicate feathering all the brighter, when caught; but, on the other hand, the bloom is sooner over, the flowers scarcely lasting a week, so that many good flowers never reach the exhibition stage. There were a few seedlings shown, but nothing to take precedence of the older varieties, although Mr. B. Simonite, Sheffield, had some of very fair quality, and so had a few others. Samuel Barlow, Esq., who

spares neither time nor trouble to make the National Tulip Show a success, was the most successful exhibitor, and most deservedly the winner of a handsome silver cup. The following is the prize list :—

RECTIFIED TULIPS.

Class I. 12 *dissimilar*, 2 *feathered and* 2 *flamed of each class.*—1st, Samuel Barlow, Esq., Stakehill, Castleton, near Manchester, with Sir J. Paxton, flamed bizarre ; Frederick Tymons, flamed byblœmen ; Madame St. Arnaud, flamed rose ; Dr. Hardy, flamed bizarre; Hepworth's William Parkinson, flamed byblœmen; Bion, flamed rose ; Heroine, feathered rose ; Garibaldi, feathered bizarre ; Hepworth's William Parkinson, feathered byblœmen ; Beauty, feathered rose ; Albert, feathered bizarre ; Musie, feathered byblœmen. 2nd, Mr. Henry Travis, Boyton, near Oldham, with Annie McGregor, feathered ; Heroine, feathered ; Annie McGregor, flamed ; Mabel, flamed ; Sir J. Paxton, feathered ; Lord Raglan, feathered ; Excelsior, flamed ; Sir J. Paxton, flamed ; Violet Aimable, feathered ; Unknown, feathered ; Lord Denman, flamed ; Duchess of Sutherland, flamed. 3rd, Mr. Thomas Mellor, Ashton-under-Lyne, with Madame St. Arnaud, flamed ; Mabel, flamed ; Industry, feathered ; Dr. Hardy, flamed ; Agnes, flamed ; Adonis, feathered ; Sir J. Paxton, flamed ; Charles X., feathered ; Duchess of Sutherland, flamed ; Rachel, feathered ; Sulphur, feathered ; Bessie, feathered. 4th, Robert Sharpley, Wakefield, with Sovereign, feathered ; Denman, flamed ; Sir J. Paxton, flamed ; Grace Darling, feathered ; Dr. Hardy, flamed ; Heroine, feathered ; Parker's King, feathered ; Madame St. Arnaud, flamed ; Industry, feathered ; Aglaia, flamed ; Talisman, flamed ; Lord Lilford, feathered. 5th, Mr. Thomas Parkinson, Derby, with Mrs. Pickerell, Sir J. Paxton, feathered and flamed ; Mrs. Barlow, Nellie Pearson, Mrs. Edwards, Queen of the May, good ; Heroine, very fair ; Annie Gibbons, Dr. Hardy, Industry, and Duchess of Sutherland.

Class II. 6 *dissimilar*, 1 *feathered and* 1 *flamed of each class.*—1st, Mr. Thomas Parkinson, Derby, with Heroine, feathered ; Mrs. Pickerell, feathered ; Sir J. Paxton, feathered ; Sir J. Paxton, flamed ; Mabel, flamed ; Lively, flamed. 2nd, Mr. Daniel Woolley, Stockport, with Mrs. Bentley, feathered ; Duchess of Sutherland, feathered ; Heroine, feathered ; Sir J. Paxton, flamed ; Olivia, flamed ; Sir J. Paxton, feathered. 3rd, Mr. Thomas Mellor, with Mabel, flamed ; Charles X., feathered ; Rachel, flamed ; Duchess of Sutherland, feathered ; Rachel, flamed ; Sir J. Paxton, flamed ; Adonis, feathered. 4th, Mr. Henry Travis, with Violet Aimable, Lord Denman, Mabel, Heroine, Sir J. Paxton, and Excelsior. 5th, Mr. Robert Sharpley, with George Hayward, Mrs. Jackson, Madame St. Arnaud, Modesty, Lord Denman, and Sir J. Paxton. 6th, Mr. Joshua Hague, Stockport, with Sir J. Paxton, Aglaia, and others. 7th, Mr. James Thurston, Wolverhampton, with Adonis, Sir J. Paxton, feathered and flamed, Barmaid, Triomphe Royal, and Talisman.

Class III. 6 *dissimilar*, 1 *feathered and* 1 *flamed of each class.* (10s. 6d. subscribers only.)—1st, Mr. Hugh Houseley, Stockport, with Sir J. Paxton, flamed ; Talisman, flamed ; Mabel, flamed ; Mabel, feathered ; Aimable, feathered ; and Charles X., feathered. 2nd, Mr. John Wood, Royton, with Sir J. Paxton, flamed ; Friar Tuck, flamed ; Lord Denman, feathered ; Heroine, feathered ; Friar Tuck, feathered ; and Prince of Wales, flamed. 3rd, Mr. Edward Schofield, Leeds, with Sarah Headley, Trip to Stockport, Sir J. Paxton, Lord Denman, and two others. 4th, Mr. William Dymock, Stockport, with Sir J. Paxton, Violet Aimable, Lord Denman, Mabel, and two others.

Class IV. 3 *feathered*, 1 *of each class.*—1st, Mr. Thomas Mellor, with Adonis, Lord Lilford, and Heroine. 2nd, Samuel Barlow, Esq., with Heroine, Pegg's Seedling, and George Hayward. 3rd, Mr. John Wood, with Heroine, Violet Aimable, and Lord Lilford. 4th, Mr. E. Schofield, with Duke of Devonshire, Trip to Stockport, and Sarah Headley. 5th, Mr. H. Travis, with Heroine, Masterpiece, and another. 6th, Mr. Daniel Woolley, with Sir J. Paxton, William Bentley, and Heroine.

Class V. 3 *flamed*, 1 *of each class.*—1st, Samuel Barlow, Esq., with George Hayward, Aglaia, and Sir J. Paxton. 2nd, Mr. Hugh Houseley, with Mabel, Princess Royal, and Sir J. Paxton. 3rd, Mr. Henry Travis, with Sir J. Paxton, Aglaia, and Duchess of Sutherland. 4th, Mr. William Bentley, Stakehill, Castleton, near Manchester, with Talisman, Dr. Hardy, and one unknown. 5th, Mr. Thomas Mellor, with Lovely, Sir J. Paxton, and Duchess of Sutherland. 6th, Mr. Daniel Woolley, with Sir J. Paxton, Mabel, and Princess Royal.

Class VI. 2 *Tulips*, 1 *feathered and* 1 *flamed* (for maiden growers only).—Mr. Jesse Hardwick, the only exhibitor, was 1st, with Pilate and Mrs. Cobden.

Class VII. 1 *feathered and* 1 *flamed, of any class.*—1st, Mr. Henry Travis, with Heroine and Sir J. Paxton. 2nd, Mr. Hugh Houseley, with Heroine and Sir J. Paxton. 3rd, Mr. Daniel Woolley, with Seedling and Sir J. Paxton. 4th, Mr. John Wood, with Lord Lilford and Mabel. 5th, Mr. Edward Schofield, with Mrs. Nichols and Lord Denman. 6th, Samuel Barlow, Esq., with Sir J. Paxton, feathered and flamed.

Class VIII. *Single blooms.*—Ten prizes were offered in each group, and were awarded as follows :

Feathered Bizarre.—1st, Mr. Robert Sharpley, with Lord Lilford. 2nd, Mr. Thomas Parkinson, with Sir J. Paxton. 3rd, Mr. John Wood, with Lord Lilford. 4th, Mr. E. Scholefield, with a Seedling. 5th, Mr. John Heap, Ashton-under-Lyne, with Sulphur. 6th, Mr. John Morris, with John Ratcliffe. 7th, Mr. Benjamin Simonite, Sheffield, with a Seedling. 8th, Mr. Daniel Woolley, with Sidney Smith. 9th, Mr. R. Sharpley, with Masterpiece. 10th, Mr. T. Mellor, with Flora.

Feathered Byblœmen.—1st, Mr. Edward Schofield, with Vicar of Radcliffe. 2nd, Mr. E. Schofield, with George Edward. 3rd, Mr. H. Travis, with Mrs. Jackson. 4th, Mr. John Morris, with a Seedling. 5th, Mr. T. Mellor, with Mrs. Hepworth. 6th, Mr. Houseley, with Violet Aimable. 7th, Mr. T. Mellor, with Adonis. 8th, Mr. J. Morris, with Mrs. Pickerell. 9th, Mr. E. Schofield, with a Seedling. 10th, Mr. E. Schofield, with Sarah Jane.

Feathered Rose.—1st, Mr. H. Travis, with Heroine. 2nd, Mr. H. Travis, with Heroine. 3rd, S. Barlow, Esq., with one unknown. 4th, S. Barlow, Esq., with Charmer. 5th, S. Barlow, Esq., with Sarah Headley. 6th, Mr. H. Travis, with unknown. 7th, Mr. H. Houseley, with Mrs. Lea. 8th, Mr. H. Houseley, with Violet Aimable. 9th, Mr. H. Travis, with unknown. 10th, Mr. W. Dymock, with Lady Crewe.

Flamed Bizarre.—1st, Mr. H. Houseley, with Sir J. Paxton. 2nd, Mr. H. Houseley, with Sir J. Paxton ; 3rd, Mr. Houseley, with Dr. Hardy. 4th, Mr. E. Schofield, with a Seedling. 5th, Mr. James Thurston, with Sulphur. 6th, S. Barlow, Esq., with unknown. 7th, Mr. E. Schofield, with Seedling ; 8th, Mr. H. Travis, with Masterpiece ; 9th, Mr. H. Houseley, with King. 10th, Mr. H. Houseley, with Ariosto.

Flamed Byblœmen.—1st, Samuel Barlow, Esq., with Hepworth's William Parkinson. 2nd, Mr. H. Houseley, with Chancellor. 3rd, Mr. Daniel Woolley, with Lord Denman. 4th, Mr. H. Travis, with

Duchess of Sutherland. 5th, Mr. W. Dymock, with unknown. 6th, S. Barlow, Esq., with unknown. 7th, Mr. H. Travis, with Atlas. 8th, Mr. T. Anson, with unknown. 9th, Mr. J. Morris, with Violet Aimable. 10th, Mr. D. Woolley, with Norval.

Flamed Rose.—1st, S. Barlow, Esq., with Annie MeGregor. 2nd, S. Barlow, Esq., with Annie MeGregor. 3rd, Mr. T. Mellor, with Mabel. 4th, S. Barlow, Esq., with Lady Sefton. 5th, S. Barlow, Esq., with Celestial. 6th, Mr. H. Houseley, with unknown. 7th, Mr. D. Woolley, with Triomphe Royale. 8th, Mr. J. Wood, with Catherine Gordon. 9th, Mr. J. Morris, with Sarah Headley. 10th, Mr. J. Thurston, with Headley's Mary.

Class IX. *The Best Feathered Tulip in the whole Exhibition.*—Mr. Thomas Parkinson, Derby, with Heroine, feathered rose; a grand flower, with a rich bold feather. *The Best Flamed Tulip in the whole Exhibition.*—Samuel Barlow, Esq., with Hepworth's William Parkinson, flamed byblœmen; a fine flower, of very grand properties.

Breeder Tulips.

Class X. 6 *dissimilar*, 2 *of each class.*—1st, S. Barlow, Esq., with Aliee Grey, Sir J. Paxton, 27-62, George Hardwiek, Riehard Yates, and Mrs. Barlow. 2nd, Mr. S. Mellor, with Sir J. Paxton, Aliee Grey, Mabel, Dr. Hardy, Ellen Faweett, and Baroness Burdett-Coutts, 3rd, Mr. John Heap, with 76-62, Olivia, Annie MeGregor, Sir J. Paxton, Wm. Bentley, and Dr. Hardy. 4th, Mr. John Morris, with Lady May, Madame St. Arnaud, Wm. Bentley, J. Murray, Dr. Hardy, and Sir J. Paxton. 5th, Mr. J. Thurston, with Florenee Isabelle, J. Dorrington, Mrs. Thurston, and 3 Seedlings; 6th, Mr. R. Sharpley, with Dr. Hardy, Hardwick's Seedling, Parker's Emperor, and 3 Seedlings.

Class XI. 3 *dissimilar*, 1 *of each class.*—1st, S. Barlow, Esq., with Aliee Grey, Mrs. Barlow, and Richard Yates. 2nd, Mr. S. Mellor, with Sir J. Paxton, Ellen Faweett, and Mabel. 3rd, Mr. E. Schofield, with Queen of England, Duchess of Sutherland, and Seedling. 4th, Mr. Ben. Simonite, with 3 Seedlings. 5th, Mr. J. Morris, with Annie McGregor, Dr. Hardy, and Duchess of Sutherland. 6th, Mr. D. Woolley, with King of the Universe, Sulphur, and Mabel. 7th, Mr. H. Houseley, with Annie MeGregor, Sir J. Paxton, and Philip I. 8th, Mr. Wm. Bentley, with 3 unnamed.

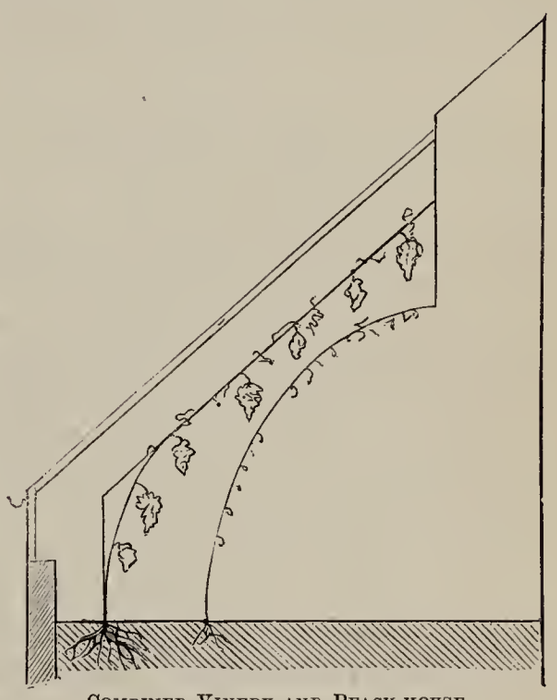
Class XII. *Single blooms, of each group. Bizarre.*—1st, Mr. H. Travis, with Horatio. 2nd, Mr. H. Travis, with Riehard Yates. 3rd, Mr. Ben. Simonite, with Seedling. 4th, Mr. H. Travis, with Sir J. Paxton. 5th, Mr. T. Mellor, with Sulphur. 6th, Mr. H. Travis, with Lea's No. 2. 7th, Mr. Ben. Simonite, with Seedling. 8th, Mr. T. Mellor, with Dr. Hardy. *Byblœmen.*—1st, Mr. H. Houseley, with Philip. 2nd, Mr. R. Sharpley, with Emperor. 3rd, Mr. R. Sharpley, with Aliee Grey. 4th, Mr. E. Sehofield, with Duke of Devonshire. 5th, Mr. J. Morris, with Dragon, 6th, Mr. W. Bentley, with Seedling. 7th, Mr. Jesse Hardwick, with Beauty of Brighouse. 8th, Mr. J. Morris, with Ne Plus Ultra. *Rose.*—1st, Mr. T. Mellor, with Olivia. 2nd, Mr. H. Houseley, with Mabel. 3rd Mr. T. Mellor, with Mrs. Barlow. 4th Mr. D. Woolley, with Charmer. 5th, Mr. H. Travis, with Atlas. 6th, Mr. T. Mellor, with Unknown. 7th, Mr. B. Simonite, with Seedling. 8th, S. Barlow, Esq., with unknown.

Class XIII. *The Best Breeder in the whole Exhibition.*—Mr. Henry Travis, with Horatio, a very fine bizarre breeder.

—W. Bolton, *Warrington.*

VINES IN PEACH-HOUSES.

In order to make the most of the means at one's disposal, it is frequently necessary to fall out of the common rut; and amongst other things, glass structures have to be turned to purposes foreign to those for which they were intended when they were built. However, the growing of Vines and Peaches together is an old practice, and some of the best fruit of both which I have ever seen, have come out of the same house! The difficulty in the case of the peaches usually arises from their exclusion from light and air by the vines which are



Combined Vinery and Peach-house.

overhead; but by training the vines under the rafters (when they are present), and keeping the shoots thin, lashing each neatly to the vines so that the end of the one shoot finishes where the other begins, but little harm will be occasioned by the exclusion of light.

We have seen vines and peaches—both of them doing well—which have been grown together for many years, the vines being trained outwards, but kept closely stopped. The rafters were of the old-fashioned type—heavy, and a good distance apart. Ours are iron and copper houses, which seem to want a little extra shading of some kind, so that we find the vines by no means objectionable to the peaches trained immediately beneath them, and up the back wall.

In one house, 33 feet long, six hundred or more good peaches were ripened in June and

July last year; and from another house of similar dimensions for late work, over five hundred fruit of very fine quality were gathered. The grapes were at the same time very useful, their colour being extra good. A section of one of the houses referred to above is given in the accompanying sketch, drawn to scale, which shows the position of the trellises, peach trees being also trained against the back wall, which is 18 feet high. The curved trellis is about 3 feet from the glass, and a good distance from the vines. The height in front is 4 feet, and the width of the vinery 15 feet; the rafters narrow iron ones, $3\frac{1}{2}$ feet apart.—M. TEMPLE, *Impney Hall Gardens, Droitwich.*

WHEN IS THE BEST TIME TO TRANSPLANT HOLLIES?

BY many this may be thought an open question, and, no doubt, much depends upon the nature of the ground where the planting has to be done. It is often very difficult to succeed well in stiff and adhesive soils, at whatever time the work may be done; and in order to get them to succeed well, much often depends on the means at command, even when good plants are transplanted.

Without entering upon this subject for the present, I wish to bring under notice a very successful operation in the transplanting of Hollies which was carried out in Mr. Smith's nursery, near Worcester, in April last year. It may be remembered that both March and April of last year were very fine and generally dry months. There were some 1,500 or 1,600 hollies removed fully one-third of a mile from one part of the ground to another. They included a good variety of these very hardy and ornamental plants, but a large portion of them were green hollies, from about 4 feet to 8 feet high, all promising to become handsome specimens, with straight stems and very regularly branched. Of the *Weeping* varieties of holly there was also a good assortment, most of these being from 6 feet to 9 feet high, and including green, silver-variegated, golden-variegated, &c. Where the extent of the ground will permit of its being done, the introduction of a selection of weeping hollies would ensure a very pleasing feature about any residence.

These were all transplanted in the fine dry spring of last year, and not one of them died from being transplanted. The soil is a deep rich friable loam, having a fair amount of sand in it, and such as may be dug over with comfort a few hours after a heavy shower of rain has fallen on it.—GEORGE DAWSON, 23 *Bedwardine Road, St. John's, Worcester.*

VEITCH'S MANUAL OF CONIFERÆ.

A MANUAL of the Coniferous Plants cultivated in British gardens was much wanted, and the Messrs. Veitch have, therefore, done well to prepare and issue the volume now before us, which is said to be founded on a useful treatise, published many years ago, by their predecessors at the Royal Exotic Nursery, Messrs. Knight and Perry. The book, which forms a handsome octavo volume, and is profusely illustrated, contains, first, a general review of the order, and secondly, a synopsis of the hardy kinds cultivated in Great Britain. The general review explains the structure of the various organs of the plants, the strength of their timber, and the distribution and classification of the species. The second part, or synopsis, shows, first, the arrangement adopted, which is as follows:—Tribe Abietineæ, including the genera Abies, Larix, Cedrus, Pinus, and Araucaria; tribe Taxodiæ, including Sciadopitys, Wellingtonia, Sequoia, Taxodium, Glyptostrobus, Cryptomeria, Cunninghamia, and Athrotaxis; tribe Cupressineæ, including Cupressus, Retinospora, Biota, Thuia, Thuiopsis, Libocedrus, Fitzroya, and Juniperus; and the tribe Taxineæ, including Taxus, Cephalotaxus, Torreya, Ginkgo, Saxe-Gothæa, Prumnopitys, and Podocarpus. Then follows an account of the genera, species, and varieties, in the same order, occupying the bulk of the book, which extends to 342 pages.

The work has been prepared with care, and may, we trust, have some influence in reviving the taste for coniferous plants, which has been somewhat rudely checked by the losses of the last few winters. It will be particularly useful for the account given of the newer Japanese Conifers, which are, many of them, exceedingly ornamental, and appear to be exceptionally hardy. As the *Manual* will supply a want which has long been felt, and is of a trustworthy character, it will, no doubt, as it deserves to do, meet with public approbation and

support. We should add that it abounds in figures of the newer and more important species. —T. M.

NEW CHOICE CAMELLIAS.

SOME short time since we noticed at the nursery of Mr. Bull, Chelsea, some three or four interesting and choice new and rare Camellias, which we thought well worthy of being commended to the notice of cultivators. Our notes on them read as follows:—

Don Pedro.—Quite a novelty amongst these charming winter and spring flowers. The dark-green leaves, which are remarkably short and broad, with an acuminate point, and strongly marked serratures, give a striking character to the plant. The flowers are about the medium size, neatly and symmetrically imbricated, with broad concave petals, smooth at the edge, and peculiarly pleasing in colour, the marginal portion of the petals being white, while the inner parts are of a rosy-carmine, which passes outwards in lines from the base of the petals, but does not reach the outer half, which remains of a pure white. This pretty rosy tint, showing up from the inner depths of the flower, adds greatly to its effectiveness and beauty.

José Marquez Loureiro.—The old Double-white and fimbriata alba are varieties of such sterling merit, that they are universally admired; the new variety here named is also one of the desirable and meritorious whites, and it has good-looking bold foliage, which is a great relief to the flowers, and is just the one point in which the old variety is deficient. The flowers are of about medium size, pure white, and very full of broad, smooth-edged petals, the outer of which reflex, while the central ones retain the concave or cup-like form.

La Pace.—A charming Italian variety, bearing handsome flowers of medium size, the petals broad and smooth, not crowded together, but distinct, so as to display the greater portion of their surface, while making up a flower sufficiently double. The colour is blush-white, freely flaked in bold stripes with bright carmine-red. It is something in the way of Contessa Lavinia Maggi, but more highly coloured, from the bolder character of the markings.

Leon Leguay.—This fine variety was distributed some few years since by the late M. Meillez, but is yet very little known, the Camellia being comparatively slow of increase. The flowers are very handsome, of medium size, and beautifully formed, the shell-like smooth-edged petals being ranged with perfect symmetry. The colour is crimson, more or less mottled with blotches of white, the two colours affording mutual relief. It is a very neat and pretty Camellia, well worth obtaining. —T. Moore.

SUBURBAN GARDENING.

JULY.—That the season is a late one is generally admitted. Frost and drought combined have acted as retarding influences, and the prevalence of east winds had a decidedly deterring influence. Warm, growing weather has set in, but what is greatly needed are warm, invigorating rains, to moisten the soil, and quicken the development of the "kindly fruits of the earth." On the whole, garden crops have decidedly improved within the past few weeks.

Kitchen Garden.—The hoe must be kept constantly at work among growing crops, as it is one of the best means that can be adopted for opening the soil to rains, keeping down weeds, and encouraging a healthy and free growth. Another necessary piece of work is to clear off all early crops as soon as possible when ready, then to manure and dig up the ground, and replant with crops for winter and spring use. *Celery*, *Broccoli*, *Winter Greens*, &c., should be planted out, so soon as ground is cleared for their reception. A supply of *Salading* can be maintained by sowing *Lettuce*, *Endive*, *Radishes*, &c., also *Australian Cress*, a subject that is not so much grown as it deserves to be. *Peas* and *Beans* should be kept well earthed up, and freely watered, if the weather is dry; and supplies of liquid manure should be given occasionally, if it can be done, as the crops are largely benefited in this way. *Tomatos* planted against walls and other convenient places should be trained, and the branches thinned out, to admit light and air. *Ridge Cucumbers* and *Vegetable Marrows* will also be benefited by a little judicious thinning.

Fruit Garden.—*Peach* and *Nectarine* trees against walls should be gone over by some qualified person, in order to remove every shoot the welfare of the trees requires should be removed, care being taken to leave the trees sufficiently furnished. As a safe principle, it is best to save as little as possible to be cut out at the winter pruning. The stoning period has now arrived, and if sufficient fruit be not cast off in the process, it will be well to thin out judiciously. In nailing-in the shoots of young and vigorous trees, those which have thrown out many laterals may be shortened with great advantage to the best placed lateral, which should then be trained on as a leader. The process of nailing-in the shoots, and stopping the late growths of fruit-trees in general must be attended to; and, should dry weather prevail, watering will be necessary to newly-planted trees, and also to such as are swelling the fruit. The canes of *Raspberries* should be thinned out, in the case of plants making a free growth. Beds of *Strawberries* should be

mulched, if not already done, and the plants well watered in times of drought.

Flower Garden.—The flower-beds having been furnished, what is now required is to keep them as neat, perfect, and effective as possible. The trailing-plants will require pegging down; others will need tying to stakes. It is always well to keep a few plants in pots, to supply any vacancies that may occur in the beds. After a soaking rain, the beds may be surfaced over with cocoa-nut fibre, which keeps them cool and moist, as well as imparts a neat appearance. Cuttings of *Pinks* can be put in under a hand-glass in a prepared bed of sandy soil, or be put into pots and kept in a cold frame. During the month, *Carnations* and *Picotees* can be layered. *Hollyhocks*, *Dahlias*, *Delphiniums*, *Phloxes*, and other tall-growing plants should be kept neatly tied to stakes, to prevent the wind from blowing them about. Creepers on walls, such as *Roses*, *Clematis*, and others that are making a quick growth, should be kept tied or nailed out promptly, so as to give the shoots room to develop, and neatly cover the surface of the wall. The same class of plants trained to poles, pillars, &c., should be tied in also. *Roses* can be budded in dull weather, and the ties of the earliest budded should be loosened, as soon as they begin to grow. The grass plat should be rolled and mown and kept neat, and garden walks kept free of weeds and neatly rolled. *Biennials* and *Perennials* can be transplanted in dull, showery weather, when time permits. Seedling *Pansies* and *Violas* can be planted out in beds or patches to bloom in autumn, as they are very useful for this purpose.

Cold Frames.—All the *Primula* family can still be divided and potted, and placed on a moist ash bottom to make their growth, keeping them sprinkled overhead in dry weather. Those already potted should have the soil stirred occasionally, decaying leaves removed, and the plants kept clear of green-fly. Neglect at this season of the year will prove fatal to many of the plants, and it is by a constant discharge of small attentions that the occupants of the cold frames will be kept healthy and doing well.

Greenhouse.—At this season of the year Greenhouse plants required for late blooming will be all the better for a shift, so as to encourage them to grow on into good size before they flower. *Primulas*, *Cinerarias*, and *Cyclamens* for winter-blooming require shifting and good culture, to have strong plants to bloom well in October and November. All kinds of hard-wooded plants that are out of bloom may now be repotted with advantage. All flowering plants will need to be carefully attended to in the matter of watering during hot drying weather, removing, at the same time, decaying foliage and blossoms. Plants that are pot-bound will be much benefited by a surface-sprinkling of some fertiliser, such as Standen's Amateur's Gardener's Friend, or Clay and Levesley's Manure. Cuttings of *Pelargoniums* may now be put in, in order to have strong plants to flower early next summer. The syringe can be freely used early in the morning and in the afternoon; and the floor of the house should be kept moist and cool, by means of occasional sprinklings of water.—Suburbanus.

GARDEN GOSSIP.

The Great Flower Shows of the past month have been both of them successful as exhibitions, though held at the same time. That of the *Royal Horticultural Society* was a good general show, and remarkable for the display of implements and garden appliances. That of the *Manchester Royal Botanical and Horticultural Society* was, as usual, remarkable for its grand display of orchids. The annexe tent was occupied by a fine series of Rhododendrons from the Bagshot nurseries of Messrs. John Waterer and Sons. This latter Society attracted 44,000 visitors to its show, and realised some £700 profit; but we regret to find the London sightseers did not support that at South Kensington, so that it proved to be a loss. The Rhododendron displays in Hyde Park and at the Royal Botanic Society from Mr. Anthony Waterer, of Knaphill, have been finer than usual, and we believe a good display was also made by Messrs. J. Waterer and Sons, of Bagshot, at their exhibition in Sloane Street, Chelsea.

— We are glad to be able to report favourably on the Excelsior Mowing Machine, which is extremely simple, easy to work, and not liable to clog, as the gearing is all enclosed in a box. Unlike the machines which have the driving-wheels at the side, it will cut close up to the edge of a bed or a path, which is no small advantage. Another test of its efficiency is that the workmen "take to it." A 14-inch machine can be worked continuously with the greatest ease. The handles can readily be set to any height, so as to suit the person who is using it.

— The *Gardeners' Chronicle* speaks thus highly of Day's Early Sunrise Pea:—"On June 15th, we received a liberal sample of this Pea from the raiser, Mr. John Day, jun., Ash, near Sandwich, and found the quality excellent, superior indeed to any other early Pea we have eaten this season. Mr. Day informs us that they were grown in an exposed field, without a hedge round it, the seeds being sown in November last, and the Peas picked on June 13th. In the same field and under the same conditions the best strain of Sangster's No. 1 was sown three days earlier, and each was ready for picking at the same time. Early Sunrise, however, made one-third more per bushel in the market than the other, being so much finer and superior in quality. Mr. Day commenced sending Peas from this field on June 6th."

— An Exhibition of Designs for Christ-

MAS CARDS, inaugurated by Messrs. Hildesheimer and Faulkner, is to take place in August next, at the Gallery of the Society of British Artists, in Suffolk Street. The prizes, which range from £200 to £50, are to be awarded by W. P. Frith, R.A., J. E. Millais, R.A., and Marcus Stowe, A.R.A. The designs may include Landscapes, Animals, Birds, Flowers, &c., adapted for "children of all ages."

— FROM some experiments we have made with the FLORVITA, we can bear testimony to its being a good and safe manure. We have applied it to Auriculas of the Alpine type growing in pots, and find it to produce in them vigorous and healthy growth, and the abundant development of flowers. We have also tried it on Verbenas and similar bedding plants, with the same beneficial results.

— MESSRS. RICHARDSON AND CO. announce the PARISIAN CHAIN BLINDS for shading Horticultural buildings. They are made of thin wood laths, connected by galvanised iron chains, and are intended to be fixed on the outside of the roof, being rolled up when not required by a single cord running over a pulley. They also afford protection against frost in winter. Such blinds should be neat, durable, and efficient.

— WALL-FRUITS are sometimes attacked by SLUGS. Mrs. E. Stephens suggests that in order to prevent these molluscs or any creeping insects from touching the fruit, it is a good plan to first wash the wall about a foot high, and also the trees [?], with gas tar, and then to rough-cast the surface with clippings of either furze or horsehair. No creature will pass over it.

— A NEW Fern, DAVALLIA ELEGANS POLYDACTYLA, has lately been introduced by Messrs. Veitch and Sons, of Chelsea. It was raised in their establishment, from spores of D. elegans, by Mr. Schneider, and was exhibited at a recent meeting of the Royal Horticultural Society, when it received the unanimous award of a First-class Certificate. The whole contour of the plant is extremely ornamental, and in its general aspect resembles its typal form. There are the stoutish brown-scaled rhizome, the smooth brown stipites, the triangular quadripinnate frond, the coriaceous texture, the glossy surface, and the dark-green colour; but instead of the apex of the frond itself and the apices of the pinnæ and pinnules each running out to and terminating in a narrow point, these points become dilated and split down into several divisions, each of which is again multifidly divided, so that the apices all become crested, or rather, perhaps fingered, the divisions being spread out flat, and not curled into a crest. The other parts of the frond are normal, and the indusium is of the half cup-shaped form peculiar to the species, with usually a lobe or tooth of the outer margin projecting beyond it like a horn. It will be a good, useful decorative fern.

— THE DOUBLE CLEMATIS is not so much appreciated as it deserves to be as a pillar plant for the conservatory. There are several very good varieties in cultivation, notably C. Fortunei, which has creamy-white sweet-scented flowers; Lucie Lemoine, and Duchess of Edinburgh, both white, very full and pure, and deliciously scented; Mrs. G. Innes, pale-lavender blue; and Countess of Lovelace, bluish-lilac, very fine and sweet. These all belong to the florida group, and bloom from the old or ripened wood. The flowers in their young state have the sepals more or less incurved over the silky tails of the ovaries, but they gradually unfold, and the full-blown flowers are large and striking, and remain in perfection for a considerable time. All of them are hardy, and do well against a south-west wall, though sometimes they do not flower so freely as might be desired, or get injured by frost. In the conservatory, however, these Clematises flourish, and there, if planted in good soil, and trained up the pillars and rafters, they furnish a fine succession of flowers.

— THE "gem of gems" amongst Odontoglots is said to be the ODONTOGLOSSUM PRIONOPETALON, recently bloomed in Sir Trevor Lawrence's cool Odontoglossum-house, in which, though well furnished with innumerable flower-spikes of the best varieties of O. Alexandræ, O. triumphans, &c., the eye immediately singled out this Odontoglossum prionopetalon as the gem of the whole group. This plant bore a spike about 2 ft. in length, bearing sixteen flowers, each nearly 4 in. across, in shape like a fine, broad-petalled O. Alexandræ, in colour intermediate between O. Alexandræ and O. triumphans. The flat form, the saw-like edge to the petals, and the wax-like appearance of the flowers, distinguish it from any other Odontoglot at present in cultivation.

— ACCORDING to the *Garden*, the new double-flowered TROPÆOLUM HERMINE GRASSHOFF is one of the most attractive of plants. It is of dwarf growth, with the flowers perfectly double, the petals being arranged in a flat head quite three inches in diameter. The colour is a brilliant scarlet, which the deep green of the foliage seems to intensify. It promises to become a valuable plant both for ordinary pot decoration and for cutting purposes, as the flowers last a long time. It was exhibited by Messrs. Cannell and Sons, Swanley.

— IN reference to the HARDINESS of JAPANESE EVERGREENS, Mr. W. Thomson, of the Tweed Vineyard, Galashiels, writing to the *Scotsman*, observes that "no frost has been so destructive to vegetable life for 150 years as that of this and last winter. There are many holly, yew, and other trees killed that must have stood nearly 200 years. One matter worthy of remark is that while I have seen nearly all sorts of hollies, yews, laurels, and even rhododendrons killed, I have not seen a single Japanese evergreen even injured."

— THERE are few places in the kingdom, writes "A. D.," in the *Gardeners' Chronicle*, where CAMELLIAS are more largely grown in the open air than at Glen Eyre, Southampton. "I called in February purposely to note how far the many plants growing there in very exposed positions had suffered, and found that the only injury done was the browning of a flower-bud here and there, or a leaf had been storm-beaten, but in no case were the plants more injured than Laurels or Rhododendrons. The Camellia makes its season's growth quite early, and therefore it is very hard and ripened before the winter comes on. The complaint that wind and rain will damage the bloom is ridi-

cnlous. What ontdoor flowers will not rain and wind damage? Those who grow Camellias as hardy shrubs never make snch complaints."

— "FOR years," writes Mrs. E. Stephens, "I have obtained two, sometimes three heads of BROCCOLI from the same stalk, simply by jnst cntting out the head, and leaving on either side a small lnmp of the flower, and bending the leaves over; I often lay a tiny stone to keep the leaves in place. I have sometimes had qnite a nice head again. Of conrse, the crop will last mnch longer, if so treated."

— FROM some notes on the garden of James McIntosh, Esq., Duneevan, Weybridge, published in the *Journal of Horticulture*, it appears that the TULIP BEDS were remarkably fine this spring. Mr. McIntosh has proved *La Belle Alliance* to be the richest and best scarlet bedder of all, quite snperseding Vermilion Brilliant; the blooms are very large, the colour intense, and the foliage fine. *Chrysolora* has proved the best yellow for beds, the flowers being singularly clean and without spot or blemish. *Molière*, a fine purplish flower with orange base, makes a striking bed, the more so as the orange colour shines through the base of each flower like the reflection from an enclosed lamp. *Wouvermans*, a glowing plum-colonr, forms a mass of great richness. The bulbs were planted six inches apart, and as there were practically no blanks, the effect produced was as satisfactory as could be desired. The varieties named may well be kept in mind by those contemplating having fine beds of Tulips another year.

— THE novel and showy SEDUM SEMPERVIVOIDES has recently been figured in the *Garden*. The plant, which is a biennial, is of dwarf branching habit, with blnnt, fleshy leaves, the flowers, which are borne in profnse cymose panicles, being not unlike those of the well-known Rochea falcata; they are qnite as brilliant, and are said to be very lasting. It will probably prove to be a very nseful snbject for summer bedding, or for sheltered rockwork. It comes from Asia Minor and the Caucasns.

— IN raising plants of SEAKALE FROM SEEDS, in order to secure healthy, thriving plants, a correspondent of the *Garden* informs us that as these seeds sown in the open ground, in the place where the crop is desired, seldom germinate freely or evenly, he has given up sowing them in the open ground, and raises them nnder glass. Two or three seeds are placed in a 3-in. pot amongst some rich soil, and afterwards put into a gentle heat; the plants appear in ten or twelve days, and may be grown on to a good size in the pots, and gradnally hardened off. In planting out, they can be put at the desired distances apart, and every plant may be depended on to grow. About 200 plants will make a good plantation, and the labour required to raise them in pots is trifling, compared with the advantages of the system, which secures a full plantation of early, strong, and healthy plants.

— ONE of the most interesting of Japanese shrubs is the HYDRANGEA MARIESII, recently exhibited by Messrs. Veitch, and certificated by the R.H.S. It is a distinct-looking plant, of free-growing habit, with grayish-green cordate-ovate deeply-toothed leaves, and large terminal roundish close-set cymes of lavender-blue sterile flowers, quite different in aspect from the blne form of *Hydrangea Hortensia*. The plant was introdnced three years since by Mr. Maries, to Messrs. Veitchs' collection, but was on this occasion exhibited for the first time.

In Memoriam.

— MR. J. LANE, one of the best practical gardeners in Ireland, died on May 8th, at an advanced age. He was for many years gardener to Mr. Barlow, Sibyl Hill, Raheny, and some seven or eight years since was appointed gardener at Kilcroney House, the beantiful residence of Mr. D'Arcy, near Bray. In the cultivation of fruit and vegetables Mr. Lane had few equals.

— MR. JOHN GRIGOR, of the Forres Nurseries, died on May 19th, at the age of 75. He was brought up to his father's occupation, that of a nurseryman; and, after some experience at the Fnlham Nurseries, he retnrned to Morayshire, where, in 1826, when only twenty years of age, he started the Forres Nnrseries on his own account. He became an enthusiast in arboricultnre, and wrote freely for many years in the "Transactions" of the Highland Society, obtaining its highest premiums and medals. These essays were summed up in a volnme entitled *Arboriculture*, which appeared in 1868, and has been looked npon as one of the best works on the snbject.

— MR. JOHN SANGSTER died at Romford, on May 27th, at an advanced age. He was a member of the old seed firm of Hay, Anderson, and Sangster, of Newington, and was the raiser of the early Pea "Sangster's No. 1," which for many years has been a household word amongst gardeners. He was also one of the three or four first life snbscribers to the Gardeners' Royal Benevolent Institution, and for many years served as a member of the committee of management. Some twenty years ago the firm died out, and Mr. Sangster unfortnnately met with a reverse of fortune, which left him in such reduced circnmstances, that he was placed on the pension-list of the institution which he had helped to found.

— MR. S. M. CARSON died at Gatehouse-of-Fleet, on May 22nd, in his 67th year. Mr. Carson was one of the foremost plant-growers of his day, and the records of horticultnral exhibitions testify to his great success. He was conspicuously successful as a cultivator of Azaleas and Orchids, also of stove and greenhouse plants generally; and for a length of time was a neighbour and rival of the late Mr. John Green, and the late Mr. James Falconer. He was a native of Gatehonse-of-Fleet, in Kirkcudbrightshire, and served his apprenticeship in the gardens of Cally Honse, whence he went to the nurseries of Dicksons and Co., and afterwards as a journeyman gardener to Elderslie, Renfrewshire. After being for three years in Ireland, he was employed by the Messrs. Loddiges, of Hackney, where he had the charge of the Orchids and plant stove. Thence, after abont two years, he was engaged by the late Thomas Farmer, Esq., of Nonsuch Park, Cheam; and here, under Mr. Farmer and his son, W. R. G. Farmer, Esq., Mr. Carson remained for thirty years, discharging his duties with great fidelity and credit to himself, and enjoying the fullest confidence and trust of his employers In 1872 he retired from the management of the gardens at Nonsuch Park, to the great regret of his employer, who allowed him a liberal annuity.

W.H. Fitch del.

Sarracenias:
1 Drummondii _ 2 Rubra 3 Flava _ 4 Crispata

SARRACENIAS AS FLOWERING PLANTS.

[PLATE 543.]

FOR the materials which have enabled us to produce the accompanying illustration of several forms of *Sarracenia* in the flowering state, we are indebted to Mr. W. Bull, of Chelsea, whose collection of these plants is remarkable for its extent and the rich variety which it comprises. Though, of course, the flowers of the Sarracenias have been well known, yet it has been rather the fashion to cultivate this class of plants chiefly for the sake of their pitcher-like foliage, to secure the full development of which the flowers have not been encouraged. When allowed to grow in a moderately warm house, however, they all produce their flower-stems very freely, and, as our illustration bears testimony, the flowers are of remarkable interest and beauty.

SARRACENIA DRUMMONDII.

In the accompanying plate, four of the most striking of the species are represented. Fig. 1 shows that known as S. DRUMMONDII, which has flowers of a deep mahogany-red. Fig. 2 represents S. RUBRA, which also has rich deep-red and highly fragrant flowers. Fig. 3 shows S. FLAVA ORNATA, a very free-growing form of the species, with bright yellow flowers. Fig. 4 represents S. CRISPATA, a form with white flowers, which, though sometimes classed with *S. flava*, appears to us to be quite distinct from that plant both in its form and colouring. This plant was named by us *crispata* in Mr. Bull's *Catalogue* for 1880, in allusion to the wavy margin of the lid of the pitchers, which is not very clearly indicated in Mr. Fitch's drawing. For the woodcut figures accompanying this article, we are also indebted to Mr. Bull.

A very full account of the structure of these North-American Pitcher Plants was given by Mr. Boulger, in the *Gardeners' Chronicle* (N.S. XV. 627). Subsequently Dr. Masters has described and illustrated, in the same journal, the various known species (N.S. XV. 817, and XVI. 11), as well as the hybrids (N.S. XVI. 110) which have been obtained during the last few years, and from this source, aided by our own notes, we glean the annexed abridged descriptions of the original kinds, reserving a notice of the hybrid forms for

another occasion. The plants here noted may be arranged in the following order:—

Petals red.
  Pitchers erect.
    Lid undulated, narrowed at base 1. S. DRUMMONDII.
    Lid plane, broad at the base ... 2. S. RUBRA.
  Pitchers spreading.
    Lid concave, hooded, entire ... 3. S. PSITTACINA.
    Lid flattish, sinuately wavy ... 4. S. PURPUREA.

Petals yellow or greenish-yellow.
  Pitchers erect.
    Lid concave, hooded ... ... 5. S. VARIOLARIS.
    Lid plane recurved or wavy ... 6. S. FLAVA.

Petals white or creamy-white.
  Pitchers erect.
    Lid veined with red inside ... 7. S. CRISPATA.
    Lid wholly red inside ... ... 8. S. ATROSANGUINEA.

SARRACENIA FLAVA ORNATA.

1. S. DRUMMONDII, *Croom, Ann. Lyceum, N. York*, 4, 100, t. 6.—This has erect pitchers 2 ft. long, funnel-shaped above, green, with prominent nerves, and a shallow wing; the upper part of the pitcher and lid marked with interspaces of pink or creamy-white between the veins, and the inner surface of the pitcher glossy crimson. The lid is 2 in. across, suborbicular, wavy at the margins, crimson-

spotted, covered with deflexed hairs. The flowers are nodding, 4 in. in diameter; bracts small, oblong-acute; sepals spreading, 1¾ in., ovate obtuse, reddish outside, greenish within; petals 2 in. long, 1 in. wide, broad at the base, contracted, and bent inwards below the centre, then flat and expanding into an obovate-oblong, winey-red velvety blade; disc of style 3½ in. across, five-lobed, greenish-red, with ovate, triangular, bifid lobes. This species is figured in Paxton's *Flower Garden*, 1 t. 1. The plant grown as *S. Drummondii* in British gardens has been separated by M. Decaisne, under the name of *S. undulata*, but the two plants are not now considered to be distinct.

The Var. ALBA, *Gard. Chron.*, x. (1878), 281. only differs in the paler colour of the variegation of the pitcher and the lighter tint of the flower.

2. S. RUBRA, *Walter, Flora of Carolina*, 152. This has erect, slender, funnel-shaped pitchers 10-15 inches high, with a deep leafy wing, and surmounted by an erect or inflexed ovate acute or tail-pointed lid, somewhat narrowed at the base into a broad stalk; the general colour is green, but the reticulate veins at the upper part and on the under-surface of the lid are red. The inner surface of the lid and of the upper part of the tube is covered with fine appressed hairs, pointing downwards, and is covered with a honeyed secretion. The flowers are 3 in. across, with the odour of violets; bracts oblong, boat-shaped reddish-brown; sepals obovate-oblong, obtuse, reddish-brown; petals pendulous, about 1½ in. long, broad at the base, constricted and bent inward below the middle, oblong-ovate obtuse, deep maroon crimson, velvety externally, cream-coloured within; disk of the style ½ inch across, greenish, its five lobes oblong, obtuse, notched.

The Var. ACUMINATA, of *De Candolle* (*Bot. Mag.*, t. 3,515), is the form usually grown in English gardens, and is distinguishable by its relatively very long tails to the lid.

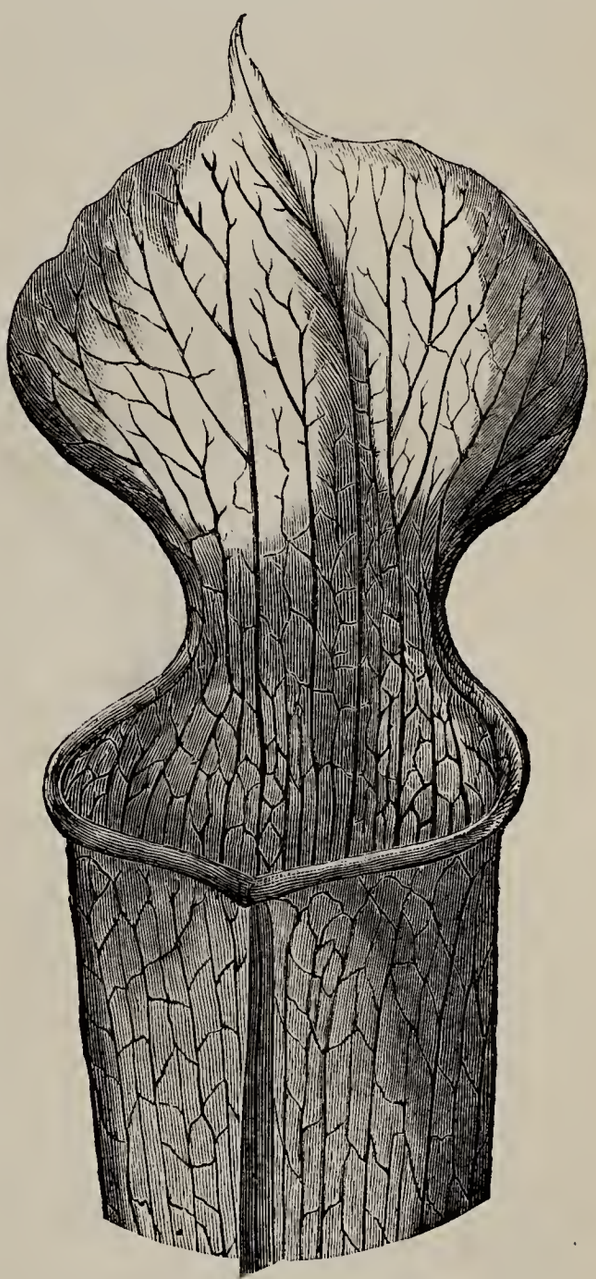
The Var. SWEETII (S. Sweetii, *De Candolle;* S. minor, *Sweet, Brit. Fl. Gard.*, ser. 2, t. 138), has cylindrical pitchers, with a narrow wing and an erect ovate pointed lid, not narrowed at the base.

3. S. PSITTACINA, *Michaux* (*Gard. Chron.*, N.S. XV., 816, fig. 146).—This has comparatively small, spreading, purplish-spotted pitchers, with the lid like a parrot's head, whence the name psittacina. The wing is very broad, and the hood-like lid is so inflexed at the margins as to leave only a very small orifice. The interior of the pitcher is lined with coarse deflexed hairs. It is apparently more difficult to cultivate than other species, as it is not so generally met with as others, nor in such good condition. We have not seen it in flower, though various hybrids have been raised from it, but the flowers are described as very similar to those of S. purpurea.

4. S. PURPUREA, *Linnæus* (*Bot. Mag.*, t. 849).—The best known of the Sarracenias, the one which has been longest cultivated, and the hardiest. The plant has short barrel-shaped pitchers of a deep reddish-violet (or green), with their large flap-like rounded and wavy lid thickly studded with decurved hairs. It frequently flowers in cultivation. The sepals are dull reddish-purple; the petals of a similar colour, but rather brighter in tint; the disc of the style is green, with the inner surface paler.

5. S. VARIOLARIS, *Michaux* (*Bot. Mag.*, t. 1710). This is not commonly met with in cultivation. The pitchers are 6-7 inches to about a foot in height, erect, trumpet-shaped, with a very broad wing and a recurved hood-like lid; green, except at the upper part, where it is mottled with cream-colour. The flowers are about 3 inches across, and of a pale primrose colour; the disc of the style is green.

6. S. FLAVA, *Linnæus* (*Bot. Mag*, t. 780).—This plant has erect elongate green trumpet-shaped pitchers, often as much as 3 feet in height, with prominent green nerves, and a very shallow wing, and having a wide open mouth 1½ inch across, with a reflexed margin and a roundish, broadly ovate acute or slightly tail-pointed lid, 2-4 inches across, markedly cordate, and narrowed into a flat leafy stalk at the base. The inner or lower surface of the lid is covered with appressed white hairs, pointing downwards, and the inner surface of the upper part of the pitcher is smooth. The flower is large,



SARRACENIA CRISPATA.

pendulous, with a feline odour more powerful than agreeable; bracts oblong boat-shaped; sepals oblong or roundish; petals oblong, constricted, and inflexed below the middle, then expanding into an oblong obovate canary-yellow blade; the disc of the style very large (2 inches across), deeply 5-lobed, the lobes deltoid, bifid at the extremity. Great variations occur in the size of the pitcher, the depth of the wing, the shape, colour, and markings of the lid, and to a less extent in the flower.

The Var. CATESBÆI (S. Catesbæi, *Elliot, Botany of S. Carolina* (1821), ii., p. 11; S. flava var. picta, *Hort. Bull;* ? S. Fildesi, *Hort. Williams*) is a form

with very large pitchers, and a flat, roundish-cordate lid, traversed by red veins. The flowers are large and showy; bracts ovate; sepals ovate, yellowish-green; petals projecting nearly 3 in., oblong-obovate, deep yellow, downy; the disc of the stigma greenish-yellow, with bifid lobes. It is one of the plants figured by Catesby in *History of Carolina*, vol. ii., p. 69 (1754).

The Var. ORNATA, *Hort. Bull*, is a rather large form, with green pitchers, traversed with red veins, the inner surface of the lid being especially marked with a network of red veins. The flowers, produced in early spring, are 8 in. across, the petals deep yellow. It differs from the var. Catesbæi chiefly in the fact that the stalk of the lid is longer, and that the upper part of the pitcher, as well as the lid, are marked with a network of red veins.

SARRACENIA ATROSANGUINEA.

The Var. RUGELII, *Shuttleworth* (var. erythropus, *Hort. Bull*), is one of the larger forms, with the lid of the pitcher well marked, and strongly blotched with crimson at the base.

The Var. LIMBATA, *Hort. Bull*, is regarded by Dr. Masters as a large form of flava, with a roundish lid, marked all round the edge on the lower side with a band of brownish-crimson ¼ in. deep. It is a remarkable variety.

The Var. MAXIMA, *Hort. Angl.*, is a large form, which only differs from the foregoing in the pitchers and their lids being wholly green.

The Var. MINIMA, *Hort. Angl.*, differs from typical flava solely in the smaller size of all its parts. The pitcher-lid is roundish, but acute at the point.

7. S. CRISPATA (S. crispata, *Moore* in *Bull. Cat.* 1880; S. flava crispata, *Gard. Chron.*) This distinct plant has lanceolate leaves. The pitchers are erect, 2 feet high, green, with prominent nerves, and with a deeper wing than in flava, taller than the flower-stems; the lid is erect, incurved, ovate acute, contracted at the base, and undulated. The upper part of the pitcher and the central part of the lid are marked by longitudinal pencillings of red, forming a rather open reticulation. The flower-stems are about 1½ feet high; the flowers are 4-5 inches across, recurved; the bracts oblong, boat-shaped; the sepals broadly ovate, obtuse, with the margins strongly rolled back; the petals pendulous, 2¼ inches long, white, broad at the base, contracted and inflexed below the middle, above spathulately oblong or obovate, hanging loosely, but somewhat converging at the tips, recurved at the edge, not regularly disposed as in *S. atrosanguinea*, some curving inwards, others hanging loosely, and in some flowers regularly spread out; the ovary oblong obtuse; and the disc of the style greenish, three inches across, with five triangular rather blunt notched lobes, and five whitish veins. The broader wing and incurved lid to the pitchers, the replicate edges of the sepals, the pure white petals, and the shorter, blunter lobes of the stylar disc, are marks which seem to indicate that the plant is specifically distinct from *S. flava*, its nearest ally.

8. S. ATROSANGUINEA, (S. atrosanguinea, *Moore in Bull, Cat.* 1880; S. flava atrosanguinea, *Gard. Chron.*) This is a distinct and very handsome species, of moderate size. The pitchers are long, narrow, funnel-shaped, tapering below into the angular petiole, expanding at the mouth, which has a recurved margin; lid broad, roundish-ovate, acute, keeled, erect, then incurved, green at first, with red reticulations, gradually becoming suffused, and finally entirely covered with a rich deep sanguineous satiny-red. The flowers are upwards of three inches across, very regularly campanulate in outline; sepals, recurved at the edge, primrose-yellow, curving over but quite separate from the petals; petals regularly curved downwards, and then turning outwards at the edge, creamy-white; disc of the style green. The flower is particularly elegant in outline; this peculiar form and the distinct coloration of the inner surface of the lids suffice to separate it from *S. flava*.

—T. MOORE.

A JAPANESE VINE.

UNDER the name of Yama-bouto, there has been introduced to the French Gardens, from Japan, a Vine, of which some interesting particulars, accompanied by a coloured figure, are published by M. Carrière in the *Revue Horticole* (1880, p. 310). It is a woody dioecious plant, of moderate vigour, like the cultivated Vine, clothed with small, thick, palmately lobed leaves, shiny above and ferruginous beneath, and producing small clusters, successively produced as the branches lengthen, of spherical berries about ⅕ in. long, of a shiny black colour, and with a deep vinous red juice, which, though scarcely sugary, is rather savoury, and without any disagreeable flavour. This juice can be used as a red ink for writing purposes, and might also be utilised for colouring wines; indeed, it is probable that in this

latter way the Yama-bouto may be made to render some service to viticulture. The juice is acidulated, and contains all the elements of fermentability. In an ornamental point of view, this Vine is not devoid of interest, and perhaps in this respect it may also be turned to good account. M. de Lunaret, to whom we owe its introduction, states that he has pyramids of it 6 ft. to 12 ft. high, covered from base to tip with its little black bunches of berries, which produce a very pretty effect.

We do not find the native name Yama-bouto recorded in Franchet and Savatier's Japanese Flora, though "Boudo" is given as the Japanese name for the *Vitis vinifera*. M. Carrière's coloured figure of the Yama-bouto is strongly suggestive of a small, weak form of this species.—M.

CULTURE OF HIPPEASTRUMS.

THE varieties of *Hippeastrum* (or *Amaryllis*) require, during the season of growth, a temperature ranging from 70° to 80° as a maximum, during the day, with abundant ventilation, and from 50° to 60° as a minimum, at night. Where a large collection is kept up, they can be had in blossom almost uninterruptedly during the whole year, since the bulbs are very accommodating; but the treatment given to ensure blossoms all the year round must be considerably varied. Many of them are uncertain bloomers, and often throw up their flower-scapes twice in the season. The instructions here given apply more particularly to bulbs grown so as to flower during March and April.

To obtain this result, it is necessary, in the first place, that the bulbs should have been well matured—that is to say, they must have been furnished during their growth with a proper supply of nourishment, and just that degree of temperature which is suited to their wants. Another matter of high importance is that insect pests, such as thrips and red-spider, must not be allowed to gain a foothold, and feed upon the succulent leaves. To secure the proper ripening of the bulbs, the plants must be fully exposed to light, and must have an abundant supply of air. Healthy growth is not to be expected, unless the plants can enjoy the full influence of fresh air during their growing period; and full exposure to light suits all bulbous plants, especially exotics, since it contributes greatly to the solidity and perfect maturation of the bulbs, and thus enables them to produce finer heads of flowers. A house with a south aspect is fitted for the plants, but a free circulation of air and a proper regulation of heat must be maintained, or the leaves will become long and spindly, and wanting in the rich, green colour and stoutness indicative of vigorous health.

The Hippeastrum thrives all the better for having a moderate proportion of fibrous matter in the compost, and the pots must be thoroughly drained. The ball of earth is thus kept in a more perfect state of aëration, and the soil does not become soddened by the free application of water, which is necessary when the flowers or the young leaves are making their growth. The soil itself should be of a loamy nature, and tolerably rich; the turfy surface of a rich loamy pasture is a good foundation, and this must be enriched by the addition of a third part of well-rotted manure, and rendered open, if necessary, by a sufficient admixture of coarse sand, sea-sand being very suitable for the purpose. In repotting, the soil should never be used in a wet or adhesive state, which would cause it to become close when pressed into the pot, and liable to become soddened by the necessary waterings. When repotting is necessary, which is when the flowering is over, the old soil should be shaken away from the roots, and they should be put into pots rather under-sized than over-sized. It will be necessary to keep the atmosphere close and moist for some days after potting, to prevent the leaves from flagging.

By about the month of September the leaves of this batch of plants will be showing symptoms of ripening, and the bulbs will have abstracted from them most of the nutritive matter they provide. In general, the plants will have ripened their leaves during October; therefore, during that and the previous month the supply of water must be gradually reduced. When the leaves have reached this stage of ripeness, the plants can either be set on the shelves of a greenhouse or under the stages, but so that no drip can fall upon them. Water should not now be applied, except just to keep the bulbs from shrivelling, and a temperature of from 40° to 50° will suffice.

Some of the earliest sorts will begin to push up their flower-scapes during January, and these must be brought to the light and supplied with a little water. It must be remembered that at this stage of development, the scape is entirely supported by the bulb, which forms young roots as growth advances, consequently less water is required than at first sight might appear. When the plants are in full leaf, liquid manure may be given them, but at the flowering stage liquid manure would be poison to them.

The thrips is the only formidable insect which preys upon these plants, but these may often be found in colonies on the under surface of the leaves during the summer months. The best and safest remedy is to fumigate with good tobacco-paper, which will require to be repeated thrice in succession at intervals of two or three days, in order to dislodge them. Gentle syringings and bedewings both morning and evening have a tendency to keep these and other insect pests under control, besides benefiting the plants in other ways. From the time the leaves are fully grown until they ripen off, the bulbs are the better for standing in the full sunshine under glass.—B. S. WILLIAMS, *Victoria Nursery, Upper Holloway.*

ON PERFECTION OF FORM IN THE TULIP.

(Concluded from p. 98.)

"WE have now to consider the form of the rim or margin of the cup or flower, and of course the form of the petals composing it.

"When viewed from above, the margin will generally be found circular in all well-formed flowers. When viewed horizontally, however, we have great diversity of forms, in consequence of the numberless varieties of angle and curve which the upper margins of the petals assume. It is, therefore, requisite to determine what is the most correct outline.

"Mr. Groom, when speaking of the petals, says, 'The cup should consist of six petals, three outer and three inner, which should be placed alternately, and close to each other; they should be broad and round at the top, and smooth on the edge, and sufficiently wide to allow of the edges lying on each other when fully expanded, by which all quartering or opening between the petals will be avoided, that being a great objection.' He further observes, 'The petals should be all level on the top, and not the three outer ones turning back from the others, nor the inner higher than the outer, which is not uncommonly the case, when the flower is a little past its prime.'

"Mr. Slater fully concurs with this description of the petals, and says, in reference to the point in question, 'the top of each petal ought to be broad and well rounded and perfectly level.'

"Both these authorities, therefore (if we may be allowed to correct a little blundering in the use of the terms *round* and *level*), are agreed that the upper margin of the petals should be round; but whether this roundness should be half or any other definite portion of a circle, we are left to conjecture; and no reason is given why the round margin should be preferred to any other form. These descriptions, therefore, are so far unsatisfactory; although, perhaps, Mr. Groom's account of the petals is, in every other respect, as complete as we could desire.

"Mr. Glenny, and Mr. Wood (apparently in deference to Mr. Glenny's opinion), on the other hand, prefer a level margin. The former observes, in reference to this point, that 'the petals should be six in number, broad at the ends and smooth at the edges, that the divisions may be not conspicuous.' In another place he says, 'the divisions between the petals' are 'scarcely to show indenture;' and in his *Garden Almanack*, he further states, 'where the petals meet is always indented; it is the worst fault; there are many varieties, but the less they indent the better.' His diagrams, both in the *Garden and Practical Florist* and the *Garden Almanack*, accordingly represent straight-margined cups.

"Mr. Wood tells us that 'well-formed flowers will have their six petals of the same size, obtuse, without notch, fringe, or serrature, narrowing towards the base, but even these of sufficient breadth to prevent the interstices from appearing.' In the diagram which accompanies his remarks, the upper margin of the cup is represented so straight, or level, as scarcely to show any indentation where the petals intersect each other; and in his figures of the petals singly, the upper part of the margin appears level, as if a portion had been cut off.

"To some persons the difference of opinion here observed may appear unimportant, and they may content themselves with believing it a mere matter of taste, on which each one may be allowed the free exercise of his own unbiassed judgment. But if we are to understand by the word *taste* 'a relish for things intellectually approved,' then it must be conceded that our taste for correct forms is (like every other faculty of the mind) capable of improvement; and that, in order to secure greater uniformity of opinion respecting them, it is only needful that truthful principles should be inculcated; for, says a distinguished writer, 'the purest taste, and the most perfect, is doubtless that which presents us with truth displayed with sense and beauty.'

"Hitherto no principles have been laid down for the guidance of our judgment, and, there-

fore, we cannot wonder that the form of the margin should now remain a disputed point. In the rules which have been given concerning it, we have only another illustration of the errors men sometimes commit, when, in order to support some peculiar notions of their own, they would blindly subject the operations of nature to laws as crude as their own imaginations, and, regardless of the truthful lessons which she herself plainly teaches, vainly require the production of forms she was never designed to create.

"In proof of this, we have only to examine the structure and economy of a tulip flower itself, in reference to the form of its margin. In every part of it there is a manifest tendency to the production of graceful curves. We see it in the central parts of the fructification; we see it in the general outline of the petals; and especially also do we see it in the arrangement of the coloured forms upon them, all of which, whether feather or flame, are found to consist of so many coloured lines disposed in curves, which bear a proportionate relation to each other, and to the form of the flower itself. To render this more intelligible, I would recommend a few well-dried petals of some of the finest varieties, which are perfect in their markings, to be carefully examined through a microscope, or, in its absence, a good common magnifying glass. The appearance presented is extremely beautiful, and will amply repay the trouble. Beneath an integument, or skin, of peculiar transparency, we observe numerous vessels proceeding upwards from the heel or point of attachment to the stem. In the microscope they have, for the most part, a rich silvery or golden-coloured appearance, but as viewed through a magnifying glass, they are more opaque, and much duller and darker in colour. When they first enter the petal they are few in number, but as they advance they divide into numerous others, which inosculate freely with each other; and at the margin we may frequently count a hundred, or a hundred and twenty, besides some twenty or more which fall to each of the lateral edges. A few of those in the centre run a straight course to the upper margin, but all the rest gradually diverge from the centre in regular curves of variable length, according to their distance from it; but all bearing the same relation to each other, the radius of every curve being the same, when not interfered with by frost, or other accidental occurrence. We see the necessity for this arrangement in the fact that the vessels which proceed to that portion of the upper margin of the petal which is not overlapped by others, almost invariably reach it at right angles; and that even those which pass to the sides, although they arrive there in a slanting direction, would also join at right angles the edge of a circle having the same curve as the upper margin of the petal, if they were only sufficiently elongated to reach it. Between the vessels are spaces containing numberless minute cells, in which is deposited the colouring matter forming feather and flame; consequently, the lines it produces assume exactly the same form as the vessels themselves. In *feathered* tulips the deposit of colour is, or should be, limited to the spaces adjoining the margin, though we often find streaks lower down in the body of the petal; and as the deposit of colour often tapers off gradually, and extends farther down some spaces than others, the peculiar appearance termed *pencilling* is the result. In *flamed* flowers, apparently in consequence of the greater closeness of the vessels in the middle and lower parts of the petal, the colouring is more apt to show itself there in dense masses; but as the vessels proceed upwards, the spaces gradually enlarge, and the lines of colour become more broken and interrupted, so as to leave the spaces clear, until we arrive near the margin, when we have the feathering developed in the manner before described. In many instances, some of the spaces are filled with colour from one end to the other, except that portion at the heel, which is usually without; and where this arrangement is only sparingly observed, we have the beautiful branching flame which characterises some of our choicest tulips.

"This peculiar organisation of the petals indisputably proves that the laws of nature are opposed to the existence of straight or level margins in tulips; for by no arrangement of single divergent curves, equal in their radius, could the vessels be made to reach the upper margin at right angles, and produce also the beautiful feathering we generally find on the lateral edges, if such were the form of the petals. Their vascular economy would have to be changed entirely, and with it the general appearance of the whole flower. This, to my mind, presents an insuperable objection, and renders it unnecessary for me to adduce other arguments against such an ideal form as a half-globular cup, with triangular petals and a level margin.

"Perhaps, however, I may be allowed to observe further that, independently of every consideration arising from the peculiar structure of the petals, it has long appeared to me an easy matter to determine the correct form of the margin on another principle. By way of illustration, let us take two tulips of the same kind; in one, the coloured delineations are similar in every respect, in the other, no two petals are alike. If we ask ourselves why the first is most admired, the answer is simply this —because the eye is more pleased with the *greater uniformity* which exists in its coloured forms, and not on account of any peculiarity in the colour itself, for that is the same in both.

Or suppose we take two tulips of different kinds, one having a long cup and the other a short one, but both equally rich in their coloured delineations, and inquire why the short cup is invariably preferred to the long one. Here, again, the answer is not because the colour is superior in either, for in both it is equally good; but simply because there is *greater uniformity* in the general outline of the shorter flower, the effect of which is considerably increased by its more perfect accordance with the form in which the colour is displayed. Experience, therefore, teaches us that the most perfect, and consequently the most beautiful, tulip is that which presents to us the most perfect uniformity of outline, combined with a corresponding uniformity in the character and arrangement of the coloured forms depicted upon it. In tulips with round cups and straight margins, however, there can neither be uniformity of outline nor harmony with the coloured forms; and believing every rule to be defective which does not provide for this best of all properties, I have long since discarded Mr. Glenny's in favour of another, which requires the upper margin of every petal to present a curve *equal in its radius to half the diameter of the flower*, when in its greatest perfection.

"This is a high standard, when conjoined with the half-globular cup; and whenever attained, we are sure to find *exactness of proportion* in every part, which, in an object of such simple form as the tulip, is essential to its perfection. It also possesses the additional advantage of being easy of application, whenever petals of unknown varieties are submitted to our inspection; and if we adopt the following mode of proceeding, much tedious calculation may be avoided:—A single petal will suffice, though it is always better to have two—one split up half-way from the heel, the other from the centre of the margin—because these would enable us to trace the outline on paper with greater accuracy, which is the first thing to be done. We then draw a line perpendicularly down the centre, adding about one-tenth of an inch, for half the thickness of the stem. If we now divide the whole length into eleven parts, whatever may be the length of the petal, seven of these parts, measured from the tip, will exactly give us the radius of the curve, which the outline of the flower itself and the upper margin of each petal ought to have; and, with the aid of a pair of compasses, we may correctly determine the quality of the tulip itself, in point of form.

"Before closing my observations, it may, perhaps, be desirable to reduce the principles we have been discussing to the form of rules, for our future guidance; and I believe we may safely adopt the following, as comprising the most natural description of 'What Constitutes Perfection of Form in the Tulip':—

"1. Every tulip, when in its greatest perfection, should be circular in its outline throughout, its depth being equal to half its width across from the tip, or highest point, of one petal to the tip of the other immediately opposite.

"2. It should be composed of six petals, three inner and three outer, which should all be of the same height, and have such a form as will enable them to preserve the circular outline; their edges being even, stiff, and smooth, and their surfaces free from shoulder, or inequality of every kind.

"3. The breadth of the petals should be amply sufficient to prevent any interstices being seen between them, so long as the flower retains its freshness.

"4. There should be exact uniformity between the outline of the cup and the outline of the upper margin of the petal, which should form an arc or curve, whose radius is equal to half the diameter or whole depth of the flower.

"My remarks have extended to a much greater length than I at first intended, but I do not regret the time spent in the investigation, as the subject is interesting. The opinions of our principal authorities are here brought under revision, and all who feel inclined may ascertain how much each has added to our knowledge respecting it. As far as I could, consistently with my own views, I have availed myself of their suggestions; but in the STANDARD OF FORM here recommended, some new points will be found deserving of notice. Being wholly founded on principles in accordance with the economy of nature, it will more surely abide the test of time; and so long as the symmetrical arrangement of equal curves shall be considered more graceful and more fascinating to the eye than a motley combination of curves and straight lines, so long, there is reason to believe, it will be deemed worthy of universal adoption."—G. W. HARDY, *Warrington, December 17th*, 1846.

KEEPING GRAPES.

WE find that none of the varieties do better than Black Alicante for very late keeping, though Lady Downe's may, perhaps, be considered the better grape of the two for general purposes. To have them sound and good, say up to the end of May—ours were fresh, plump, and good-flavoured this year up to May 18th—the water used for bottling should be kept thoroughly pure, by the use of charcoal, which should be put into fresh spring water, and by using clean bottles. Ours are,

W. H. Fitch del.

Apple Duchess of Oldenburg.

P. De Pannemaeker Chromolith. (Gand.)

this season, mostly lemonade bottles; and a number of them, for experiment, contain water two years old. It is the practice of some gardeners to allow a few inches of wood to remain beyond the bunch, but the best-flavoured and soundest berries with us have always been on wood cut nearly close above the bunch and rubbed with Thomson's Styptic. We believe that as little moisture as possible should be drawn up beyond the bunch. But the main points to ensure successful keeping are early ripening, and doing it thoroughly in order to secure abundance of sugar in the berries.—M. Temple, *Impney*.

DUCHESS OF OLDENBURG APPLE.

[Plate 544.]

For the specimens of the very handsome early Apple, which Mr. Fitch has represented in the accompanying figure, we have to thank Mr. Killick, of Maidstone, a most successful cultivator of hardy orchard fruits. The variety is well worth growing for its beauty alone, but for an early kind it is also very good in quality. Dr. Hogg says it is excellent, and of the first quality, and though Continental authorities scarcely rank it so high as this, their lower estimate may be owing to their less suitable climate, the variety being naturally a very hardy one, of Russian origin. The fruit is large for an early sort, roundish, slightly angular at the apex, with both the large closed eye and the slender stalk set in a deep cavity. The skin is greenish-yellow, streaked over the whole surface, but most strongly on the exposed side, with deep cerise-red disposed in irregular lengthened lines and patches. The flesh is whitish, crisp, juicy, and pleasantly flavoured. It ripens about the middle of August, and continues in use during the month of September. The tree is a free grower, and remarkable for the dark colour of its young wood. M. Leroy gives the following synonyms of this variety:—Borovitsky, Borowiski, Baroveski, and Charlamowski d'Automne; to which Mr. Scott adds that of Smith's Beauty of Newark.

Concerning the history of this Apple, Leroy writes:—"Originally from Russia, this Apple got to us before 1844, since in 1846 I inscribed it already, but as rare and quite new, in my catalogue. The Belgians possessed it much sooner, under its synonym Charlamowski, which our pomological congress attributed to it, again, in 1867. In England, Lindley has proved that the Horticultural Society of London received it from St. Petersburg, in the course of 1824, it having been sent from a garden of the Tauride, or Crimea. This assertion was confirmed in 1839 by the German author Dittrich, who regards this apple as proceeding from the Tauride, or at least from the Caucasian Provinces bordering on it. The late Prévost, of Rouen, to whom I had given it, characterised it in 1848 in the *Pomologie de la Seine Inférieure*, and supposed it to have originated in England or America, an opinion which, it is now known, is erroneous."—T. Moore.

WEEPING WILLOWS.

One of the most popular and widely-disseminated of weeping trees is the *Kilmarnock Weeping Willow*, the history of which may not be uninteresting. It was discovered growing wild in a sequestered corner of Monkwood estate, near Ayr, in Scotland, by Mr. John Smith, an enthusiastic lover of plants and a zealous collector. From him, Mr. Lang, a nurseryman at Kilmarnock, purchased one plant in the year 1844. Sir W. J. Hooker, Director of Kew Gardens, received two plants in the spring of 1852, and having observed how exceedingly ornamental it was, informed Mr. Lang that he thought very highly of it, and that it was much admired in the Royal garden at Kew. The name Kilmarnock Weeping Willow was given to distinguish it from the common Weeping Willow and the American Weeping Willow. Of all weeping trees, it is the one best adapted for small lawns, garden plots or yards. Very handsome plants may be obtained, grafted on stems 6 to 8 feet high, for training into umbrella heads. Grafted low, say 3 to 4 feet high, with the head nicely kept and the branches trailing on the ground, it becomes a novel and interesting object on the lawn. For rounding off or completing the end of a belt or border of trees or shrubs, it is very appropriate.

Another well-known pendulous variety is the *American or Fountain Willow*, which forms a very handsome specimen when budded standard high. While it can be trained in umbrella form like the Kilmarnock Willow, it is a much stronger grower, and requires more space. On account of its vigorous growth, it is much more difficult to keep in shape than the Kilmarnock, and, all things considered, is hardly equal to that variety for ornamental planting. It is a trailing species of American Willow, grafted standard high, and was introduced from France about the year 1852.—W. C. Barry, *Rochester, New York*.

THE PELARGONIUM SOCIETY'S EXHIBITION OF 1881.

THE Exhibition of this useful and unostentatious Society, which has maintained a career of steady progress since its foundation in 1847, was held on June 28, in the garden of the Royal Horticultural Society, in conjunction with the Rose Show. The prizes being liberal, thanks to a subscription list hitherto fairly well filled, through the strenuous efforts of the former Honorary Treasurer, Dr. Denny, there was a good display brought together, and the general quality of the exhibits was of a high standard of merit. Considerable interest was afforded by a fine group of the original species of *Pelargonium*, and of the varieties of early date, grown at Chiswick, which on these occasions are brought forward by Mr. Barron, and afford irrefragable evidence both of the advances already made by the florist in certain directions, and of the immense field which is still open to reward his enterprise. The following is a record of the best varieties shown in the two principal sections of the show, the third being devoted to cut-flowers, in which department Mr. Turner, of Slough, and Messrs. Cannell and Sons, of Swanley, held conspicuous positions:—

CLASS 1. *New Hybrids of distinct character.*—There was only one exhibit. Messrs. H. Cannell and Sons, Swanley, were 1st, for 1 plant, with Mrs. J. Douglas, a very pretty variety, raised between Lothario and Blue Boy, and having the leaves scented, and the flowers medium-sized, bright lilac with a crimson-purple blotch.

Class 2. *New Show Varieties.*—For 3 sorts, E. Foster, Esq., Clewer Manor, Windsor, was 1st, with small plants of distinct and good varieties: Zealot, scarlet, with maroon blotch, and wire-edge of scarlet; Royal Review, fiery red, and blackish-maroon top-petals; and Margaret, red-shaded pink, with the top maroon, edged with fiery red. For 2 sorts, Rev. A. Matthews, Gumley, Leicestershire, was 1st, with Russell, a good flower, with salmon-red lower petals, velvet-maroon top, and distinct white throat; and Eva, a well-grown plant, the flowers pale pink, with the upper petals dark maroon, breaking into red. For 1 sort, Henry Little, Esq., Hillingdon, Uxbridge (Mr. Wiggins, gardener), was 1st, with Magnet [F.C.C.], a very good variety of the Illuminator type, but a better formed flower, the colour glowing crimson-scarlet, with small black blotch on top petals, and white eye suffused with lake.

Class 3. *New Fancy Varieties.*—Mr. Turner was the only exhibitor, and took the 1st prize for 3, with Queen of the Hellenes, the best of the three, white, with rose blotches; Sims Reeves, a good dark flower; and Florence Taylor, rose, with deeper rose blotch.

CLASS 4. *New Decorative Varieties.*—For 3 sorts: Messrs. J. and J. Hayes, of Edmonton, were 1st, with Mr. Ashby [F.C.C.], which, like all of its class, is most floriferous; the flowers are somewhat rough, but of a good colour, bright rosy-red, with white centre suffused with pink; Grand Lilas, white flushed with pink, each petal having a reddish-maroon blotch; and Ruby, very free-flowering, with medium-sized flowers, bright reddish-scarlet, suffused with lake at the base of petals, the upper ones with a maroon-purple blotch. For 2 sorts, H. Little, Esq., was 1st, with Hemsley's Annie Hemsley [F.C.C.], a very free-flowering sort, with the flowers pale salmon-scarlet, edged with white, and having the upper petals blotched and veined with dark scarlet; and Jackson's Aurora.

No other awards were made in this section.

CLASS 10. 6 *Show Varieties, specimen plants.*—H. Little, Esq., was 1st, with grand examples, finely bloomed, consisting of Prince Leopold, one of the best for specimens; Setting Sun (Jackson), bright red, free-blooming, distinct and good; Magnificent; Illuminator, an excellent bright scarlet; Jeannette, and Victory. Mr. Turner was 2nd, with smaller well-flowered specimens of Modesty, Ambassador, Claribel, Venus, Mabel, and Illuminator. F. Hunt, Esq., Stamford Hill (Mr. Hammond, gr.), was 3rd.

CLASS 11. 18 *Show Varieties in 6-inch pots.*—The competition here was keen, and the display most attractive. H. Little, Esq., was 1st, with large well-flowered plants of Amethyst, Ritualist, Hermit, Rosalind, The Baron, Emperor William, Dauntless, Illuminator, Criterion, Valiant, Formosa, Magician, Thebais, Faust, Fortitude, Christabel, Britomart, and Superb. Mr. Turner was 2nd, with fine plants of Joe, Maid of Perth, Fortitude, Claribel, Mountain of Light, Illuminator, Valiant, Sensation, Constitution, Virgin Queen, Nero, Ritualist, Hector, Faust, Alice, Amethyst, Trojan, and Emperor William. F. Hunt, Esq., was 3rd.

CLASS 12. 6 *Fancy Varieties, specimen plants.*—Mr. Turner was 1st, with Fanny Gair, Lady Carington, Mrs. Hart, Ellen Beck, Mrs. Pope, and Princess Teck. H. Little, Esq., was 2nd, with Roi des Fantaisies, The Shah, Lucy, Jeannette, and Emily Little.

CLASS 13. 9 *Decorative Varieties, specimen plants.*—These formed a very fine and telling feature of the show. Mr. Turner was 1st, and, amongst others, showed Kingston Beauty, Duchess of Bedford, Quadroon, La Patrie, Triomphe de St. Mandé, Digby Grand, Beauty of Oxton, and William Bull, in good condition. H. Little, Esq., who was 2nd, had Miss Bradshaw Improved in very fine condition. Messrs. J. and J. Hayes 3rd, all the plants being well grown and well flowered.

CLASS 14. 18 *Decorative Varieties, in 6-inch pots.*—These, like the former, were very attractive, and were greatly admired by the visitors. H. Little, Esq., who was 1st, showed Princess of Wales, Kingston Beauty, Volonté Nationale, Madame Thibaut, Triomphe de St. Mandé, Maid of Kent, Princess Hortense, Kingston Hero, Reamie, Lucie Lemoine, Racehorse, Nellie Hayes, Duchess of Edinburgh, Mrs. Ashby, and one or two others. Messrs. J. and J. Hayes were 2nd, and amongst other fine varieties showed capital examples of Madame Favart, Olivette, and Triumphans.

CLASS 15. 9 *zonal varieties, specimen plants.*—These formed one of the most brilliant features of the Show. Mrs. Lermitte, sen., Finchley (Mr. Catlin, gr.), was 1st, with brilliant plants, superbly grown, of Edgar Catlin, Alice Burton, Fanny Thorpe, Ouida, Cymbeline, Mrs. Leavers, Fanny Catlin, Rev. J. Atkinson, and Tom Elliott. D. Martineau, Esq., Clapham Park (Mr. Weston, gr.), was 2nd, with smaller, but finely bloomed plants.

Class 16. 18 *zonal varieties, in 6-inch pots.*—H. Little, Esq., was 1st, with vigorously-grown plants, furnished with finely-developed trusses, amongst which the best were Evening Star, of the rose-coloured varieties; Marshal McMahon, Sophie Birkin, and Polly King, salmon; Golden Glory, Lord Mayo, Rosa Little, and Mrs. Bennett, scarlet; Ivanhoe, fine red, with immense trusses. Mr. Meadmore, Romford, was 2nd; and Mrs. Lermitte, 3rd. Mrs. Leavers, Czarina, North Star, Mrs. Wright, Circulator, M. de Lesseps, and Cleopatra, were also conspicuous varieties.

Class 17. 9 *Double-flowered Zonal Varieties, Specimens.*—These had never been seen so finely developed at any previous exhibition; they were superbly grown and grandly bloomed. Mrs. Lermitte was 1st, with Fascination, Pioneer, Progress, Madame Thibaut, Gorgeous, F. V. Raspail, Lively, Enchanting, and Devotion. G. Simpson, Esq., Reigate (Mr. King, gr.), was 2nd, and Mr. Meadmore 3rd.

Class 18. 18 *Double-flowered Zonal Varieties, in 6-inch pots.*—G. Simpson, Esq., was 1st, with a very fine group, amongst the best of which were Amazone, Richard Serpell, Mrs. Paine, Paul Bert, Madame Thibaut, Roi des Violettes, Louis Buchner, Master Charlie, Emile de Girardin, Thomas Harper, Horace de Choiseul, and Mons. Gelein Lowagie. Mrs. Lermitte was 2nd, and Mr. Meadmore 3rd.

Class 19. 9 *Ivy-leaved Varieties, including doubles.*—H. Little, Esq., was 1st, with a nicely-grown collection of pyramidally-trained plants, all double-flowered sorts, some of the most striking being Gloire d'Orléans, Perle, A. F. Barron, Sarah Bernhardt, Madame Émile Gallé, M. Dubus, Sylphide, Madame H. Barat, and Lemoine's seedling, 29. M. V. Lemoine was 2nd, with a group containing Dr. Broca, Astre, Anna Pfitzer, and others.

The Pelargonium Society's First-class Certificate was awarded to the following novelties in the several groups:—

Show Varieties.—*The Abbott* (Foster), of good habit, truss large, flowers large, and of grand form; the upper petals dark maroon, lower petals crimson, with dark reddish-maroon markings and white eye; distinct and effective. Mr. Turner. *Duke of Albany* (Foster), dwarf, flowers large, the upper petals shaded maroon, the lower petals salmon-pink with white centre. Mr. Turner. *Christabel* (Beck), a very fine and distinct variety of the Snowflake type; flowers very large, white, with reddish-maroon blotch, very free-flowering, the plant of excellent habit, a fine exhibition variety. Mr. Little. *Britomart* (Beck), a very dwarf and free-flowering variety, the flowers being also of good form, bright orange-scarlet, the top petals maroon with bright red edge. Mr. Little. *Superb* (Beck), glowing crimson-scarlet, with rich maroon top petals edged with crimson; a dwarf and free-flowering plant, with large stout highly-finished flowers. Mr. Little. *Magnet*, already noted. Mr. Little. There were some other really good flowers in this class, which were not considered sufficiently meritorious for certificates, viz., Monarch (Foster), a grand flower, of good shape and large size, dark crimson and maroon with white centre; Florence (Foster), Chivalrous (Foster), and Letitia (Matthews); all possessed of considerable merit.

Decorative Varieties. — *Metallica* (Hayes), flowers rosy-red, with darker blotch on upper petals, very fine. Messrs. J. and J. Hayes. *Mr' Ashby* (Hayes), already noticed. Messrs. J. and J. Hayes. *Annie Hemsley* (Hemsley) already noticed. Mr. Little. Although quite distinct in character from the above, Lemoine's new varieties must be included in this section; they are dwarf in habit and wonderfully floriferous:—*Lucy Lemoine* (Lemoine), a charming variety, producing a large head of bloom; the flowers large, pure white, with occasionally a faint streak of purplish-rose in the upper petals. Mr. Little. *Belle de Jour* (Lemoine), exhibited from the Royal Horticultural Gardens at Chiswick, a splendid novelty; the flowers pure white, semi-double, each having about twelve petals; it will be very useful for bouquet-making and other decorative purposes. M. Lemoine, Nancy, France.

Zonal Varieties.—Although no awards were made in the zonal section, some very fine flowers were staged. Mr. Little's flowers were really good; Emily Little is a distinct rosy shade of pink; Venus is another and brighter cerise shade of pink. Messrs. J. R. Pearson and Sons, of Chilwell, exhibited a very fine group of their own seedlings, zonals, which were really well grown and flowered, and deservedly received the Highly Commended label of the judges. Vetis, scarlet; Constance, pinkish-rose, immense trusses, and well-formed flowers; Dr. Orton, deep crimson; Eurydice, rose, fine dwarf habit; Cypris, clear deep rose; Mrs. Sturt, rose; Mrs. Gordon, scarlet, white eye. Mrs. Jas. Gibson, salmon; and Edith, light scarlet, were all good and distinct varieties.

The following additional First-class Certificates to seedlings were awarded by the Pelargonium Society, on the meeting day preceding and following those of the show:—On June 14: to Robert Fortune, a double-flowered carmine, ivy-leaved; to Lemoine, No. 29, a double-flowered satiny-pink, ivy-leaved; to Charles Darwin, a double-flowered intense carmine-crimson zonal, all raised by M. Lemoine, and grown for him at Chiswick. On July 12: to Lemoine, 76, a pretty pink frilled decorative variety; to Madame Harmat, a double blush-white decorative variety; to Mont Blanc, a double-flowered, ivy-leaved sort, with blush-white flowers, the whitest yet exhibited; and to Henri Cannell, a very rich deep crimson double-flowered zonal, distinct in character and fine in quality.—T. M.

THE CARNATION.

MR. SHIRLEY HIBBERD'S LECTURE.

AMONGST the attractions on the occasion of the National Carnation and Picotee Society's Exhibition, held in the Council-room of the Royal Horticultural Society on July 19th, was the following lecture on the Carnation, delivered by Mr. Hibberd:—

"The Carnation is the true Gilloflower, and one of the oldest of all flowers when regarded as a subject of the florist's care. When we turn to the old books, we find Gilloflowers and Violets innumerable. The Stock is a Violet, and so is the Lily of the Valley. Amongst the Gilloflowers we find the Wallflower, Stock, and Rocket, besides the Clove, the Pink, and the Sweet William—which was often called Sweet John—and our flower of to-day, the Carnation. If you will turn to Parkinson's *Paradisus*, you will find at p. 318 a chapter headed 'Carnations,' and therein is a list of nineteen named varieties. At p. 310 is a list of thirty 'Gilloflowers.' The arrangement of the flowers in two classes by Parkinson has no scientific value, because it depended chiefly on the relative sizes of the flowers; the largest, as a rule, were Carnations, and the smaller were

Gilloflowers; but if we could hunt up the fifty or sixty sorts he was acquainted with, we should probably class his Carnations as Cloves, and his Gilloflowers as Carnations. It is a matter of some importance, however, to note that the Carnation is *the* Gilloflower of the old poets and herbalists. Other Gilloflowers were described with a qualifying adjective as 'Stock Gilloflowers,' 'Cuckow Gilloflowers,' and so forth; but these are the true Gilloflowers, and the name takes us to the sunny lands of the Latin races, for it has a Latin root, and it gives us the suggestion that the Carnation is not, in a proper sense of the term, a native flower. We have a wild Pink, indeed, and a most lovely flower it is, but it does not appear to possess the elements needful for the formation of such rich and refined flowers as are brought under our notice to-day. In common with many other garden flowers which are undoubtedly represented by wildings of the woods and fields, the influence of a south European climate appears to be and to have been needed for their full development. Hence we may treat with respect the probable reference to the Carnation by Pliny as the Cantabrica, which he says was discovered in Spain in the days of Augustus Cæsar. It is amusing to note that Pliny antedates the 'soppes in winc' of the old English writers, by describing the Spaniards as employing this flower to give a spicy flavour to their beverages. In Philemon Holland's grand translation we read, 'At this day, in their great feasts where they meet to make merry *sans-nombre*, they haue a certain wassell or Bragat, which goeth round about the table, made of honied wine or sweetmead, with a hundred distinct herbs in it; and they are persuaded that it is the most pleasant and wholsomest drinke that can be deuised; yet there is not one amongst them all who knoweth precisely what speciall herbs there be in all that number; in this only they be all perfect, that there go a hundred several kinds thereto, according as the name doth import.' Thus, in the endeavour to trace up the geographical history of the Carnation, we are reminded of the wisdom of our forefathers, who preferred to employ Carnations and Roses, and Borage and Woodruff, and Tormentil to flavour their drinks, rather than to combine destructive alkalies with equally destructive ardent spirits, or to take revenge on the blessed sunshine and the delightful thirst it engenders by swallowing frothy fluids with mysterious names and more mysterious properties. To return to the flowers, it seems that the south of Europe gave us the first start in high-class Carnation culture, as it gave the first start, and sustains the latest fashion, in the selection and management of Daffodils.

"Thus we are enabled to open the pages of the renowned John Gerard in a state of preparedness to believe that the Carnations he obtained from the worthy merchant, Master Nicholas Lete, were the first of their kind seen in this country. And the mention of its introduction by Master Lete, from Poland, affords me a proper excuse for declaring that the present exhibition is the Tercentenary of the Carnation; for the work of Gerard was published in 1597, and we may reasonably contend that it was in or about the year 1581, or, say, sixteen years before Gerard's book was completed, which carries back the history of the Carnation to a date exactly 300 years from the present time.

"So far, good; in these matters we must pay respect to authority. But we must not forget the Scriptural precept to 'prove all things.' On turning to Haydn's *Dictionary of Dates*, under the word Carnation, I find it stated, on the authority of Stow, that the flower was introduced from the Low Countries in the year 1567. It would not be difficult to harmonise this statement with the story of its introduction by Master Lete, for this we may be sure of, that it had been in this country some time before Gerard's *Herball* appeared. But I would suggest that the flower is really of greater antiquity than appears from these evidences. The 'Carnations and streaked gilivors' that Perdita describes as the fairest flowers of the season were probably as old as any flowers of the English garden; for we cannot imagine Shakespeare, in such a scene and context, introducing any flowers that had but recently come into cultivation. The *Winter's Tale* was written in the year 1601, or only three years after the publication of Gerard's book; and Perdita speaks of these flowers as deriving their special qualities, or, as we should say, 'properties,' from the arts of the florist, and as, therefore, less worthy of her attention. They are such, she says, as 'some call Nature's bastards,' and she seems pleased to own that 'of that kind our rustic garden's barren.' This goes, at least, to show that there were many varieties of the flower known in the year 1601, and that they were so far common that the humblest lovers of the garden could afford to reject them, if they were stigmatised as 'Nature's bastards.' Finally, to make an end of this part of the subject, it may be proper to state that we learn from Chaucer that the Clove Gilliflower was cultivated in this country in the reign of Edward III., and was commonly used to give a spicy flavour to ale and wine. This takes us to the middle of the thirteen hundreds, and perhaps we might, by the aid of the wild British Pink that may yet be found by the exploring botanist, be carried back to the third day of Creation, when 'the earth brought forth grass and the herb yielding seed.'

"This exhibition does not reveal to us all the glories of the Carnation family, but of certain classes of flowers that have been trained, as we may say, to certain standards of quality. I have heard to-day a question often asked at a Carnation show,—Why are there no Pinks present? There are two reasons for the non-admission of Pinks to this show,—one is that they are not Carnations, and the other is that they do not now exist as flowers, for they attain perfection in the month of June, and cannot be presented at a July show. Although, from the botanist's point of view, the Pink and Carnation are closely related, they are, in the view of the florist, separated by a wide gulf, for it is impossible to cross them, and consequently we cannot raise a Carnation from a Pink, or a Pink from a Carnation, or secure a race of flowers midway between them. The Carnation, as a show flower, is not allowed to sport into as many varieties as it pleases. It is, however, capable of producing almost every colour except true blue. The shades of red appear to be proper to it, a point in which it agrees with the wild Pink. It is from this circumstance it takes its name of Carnation, the exact meaning of which is flesh-coloured. You will remember that in the remarkable description of the death of Falstaff by Dame Quickly, in Shakespeare's *Henry V.*, the touching pathos is brightened by a stroke of wit, the effect of which is to remind us that the brave Sir John was a notable coward. The Dame says, ''A could never abide carnation; 'twas a colour he never liked,' real fighting and flesh wounds being not to the liking of Falstaff and his cut-purse followers. It is singular that this name, which equally with Gilloflower is derived from the Latin, apparently furnishes the basis of another of the old names of the flower; for the Carnation is the 'coronation,' the chaplet flower, which Spenser describes as 'worn of paramours,' its gay colour and spicy perfume doubtless rendering it

a fine antidote to the proper melancholy of a love-sick swain.

"All the colours we now find in the Carnation were known to the older florists, and John Parkinson descants on the beauties of the yellow Carnation in such a manner as to suggest that the yellow-ground Picotee was not unknown to him, although he gives no definite hint of its existence. The true foundations in floriculture laid by him were soon freely built upon, for in the year 1676 John Rae had 360 sorts of Carnations, and from this time the popularity of the flower appears never to have waned in any serious degree.

"The modern history of the flower dates from July 25th, 1850, when the first proper exhibition in the south of England took place in the Royal Nurseries at Slough, and the National Carnation and Picotee Society was formally founded. It is with unspeakable pleasure I find in the records that in the first start of this Society the names of Turner and Dodwell appear as the leading prize-takers, both at the show just referred to and the second show that was held at Derby on August 7th in the same year. Thus the year 1850 was a great year in the history of floriculture, and it seems scarcely possible, although it is perfectly true, that the two masters of the Carnation in that day are masters now, apparently younger and more enthusiastic, but with an immensity of acquired experience to sustain their zeal and constancy. Their presence here to-day may be regarded as a delightful commentary on the declaration of Wordsworth, that, 'Nature never did betray the heart that loved her,' and we may regard each of these as favoured by the Fairy Queen, who 'crowns him with flowers, and makes him all her joy.'

"It is an interesting and somewhat remarkable fact that the Carnation and its several relations, as Pinks, Picotees, and the like, endure with patience the smoke and dust of great towns. Mr. E. S. Dodwell has put the capabilities of the flower in this respect to the severest test imaginable, for he brings forth from year to year the most perfect blooms, taking a fair share of the prizes, as in the memorable year 1850; and his garden is favoured by a railway company with a perennial shower of blacks night and day, the whole year round. Indeed, the Dianthus family appear to have somewhat of the same sociable temper as the singing-birds; they appear to love the habitations of man, and hence the prudent botanist who wants a specimen of the true typical Dianthus Caryophyllus will begin to hunt for it on castle walls, ruins, or on the roofs of old sheds and cottages. I remember making a grand find in a hunt of this sort. Being on the rampage with a friend, we made discovery of a cottage roof all glorious with tufts of wild Pink, Houseleek, Stonecrop, Rock Rose, Ragged Robin, and Stitchwort, all embedded in cushions of golden moss, and wreathed about with garlands of Roses, We resolved to derive from this floral roof a grand intellectual and æsthetic treat, and were preparing to make sketches and draw up a careful catalogue of the plants. The owner of the cottage came out and smiled approvingly when we told him we had found an Eldorado on his roof, and intended to make a picture that posterity would rave about, and that would turn the heads of all botanists, florists, painters, and dadoists, so that probably the world would begin to revolve in a new way. But it came on to rain, and like a pair of cowards, we fled, promising to be on the spot next morning to accomplish the task that should renew humanity. And we were there next morning, but the scene was changed. The worthy man was on the roof, scraping away with a hoe. He had cleared off all the vegetation, to display the original red tiles, and he said, with a pride that to us was deadly, 'I thought it a pity that you should paint my cottage with all that rubbish on it; for them tiles I put on myself, for that's my trade, and I'm proud of it; for I'm a tiler, every inch of me.' What we lost individually is as nothing to what the world lost through this blundering vandalism.

"The mention of vandalism reminds me that I just now spoke of æsthetic delights. Fifty years ago the cultivators of taste in Germany were called æsthetics, because they sought and encouraged the cultivation of beauty. There are now amongst us, even in the bright world of flowers, those who profess to be æsthetics, and who coolly propose that we should undo and utterly waste the work of centuries in floriculture, and allow Nature to assert herself according to the original pattern of things, as on the third day of Creation. Yes; they dare to doom our double flowers to an ignominious oblivion, and they fondly hope we shall destroy our proper garden flowers, and plant in their place those that Nature cultivates so nicely in the woodlands and on the mountains. They really aim at destroying all our out-door pleasures, because the wild flowers are far more delightful when we have to search for them in their own breezy haunts, than they are when we bring them into the garden. Thus, if we lose our highly-cultivated flowers, and lose also the peculiar and ever fresh delight of searching for the wildings in their native haunts, there must be an end of gardening altogether. To put our beautiful garden flowers under a ban is the work of a Caliban. Caliban and his dadoistic friends will have their day and cease to be, and the good old garden flowers will continue to delight mankind and justify the labours of the florists.

"It is interesting to note that two great authorities give the florists full credit for their making of the flower that has thus far occupied our attention to-day. Turner, writing about 1550, says:—'The gardin gelouers are made so pleasaunt and swete with the labours and witt of man, and not by Nature.' And Withering, in the eighteenth century, wrote:—'The art of floriculture, sometimes despised with a reprehensible degree of fastidiousness, has in this instance transformed a plant, comparatively obscure, into one of the most delightful charms which the lap of Flora contains.'"

THE NATIONAL CARNATION AND PICOTEE SOCIETY.

SOUTHERN SECTION.

THE Show of this Section of the National Carnation and Picotee Society took place on July 19th, in the Garden of the Royal Horticultural Society, at South Kensington. Considering the extreme heat and drought of the last few weeks, the stages were much better filled than could have been expected, and the number of good, well-developed, fresh flowers was beyond the average. Several new flowers of remarkably high quality were produced, chiefly from Mr. Dodwell's collection.

Carnations.

Class A. 24 *blooms*, 12 *distinct*.—1st, Mr. E. S. Dodwell, Chatham Terrace, Larkhall Rise, Clapham,

with John Ball, S.F.; James McIntosh, S.B.; John Keet, R.F.; Fred, S.B.; Master Fred, C.B.; James Cheetham, S.F.; Thomas Moore, C.B.; George, S.B.; Mrs. Matthews, R.F.; Admiral Curzon, S.B.; Mrs. Tomes, R.F.; Squire Llewelyn, P.P.B; Harry Matthews, S.F.; Mrs. Gorton, light C.B.; Arthur Medhurst, S.B.; E. S. Dodwell, C.B.; Wm. Skirving, P.P.B.; Shirley Hibberd, C.B.; and a C.B. seedling—a stand of fresh, pure flowers. 2nd, Mr. James Douglas, gardener to F. Whitbourn, Esq., Loxford Hall, with James Douglas, P.F.; Joseph Crossland, S.B.; John Keet, R.F.; Falconbridge, P.P.B.; Rifleman, C.B.; Sportsman, S.F.; Lord Milton, C.B.; Florence Nightingale, P.F.; Sarah Payne, P.P.B.; Sibyl, R.F.; Robert Lord, S.B.; Clipper, S.F.; J. D. Hextall, C.B.; Earl Stamford, P.F.; William Spoor, S.B., wanting in purity; John Bayley, S.F.; Admiral Curzon, S.B.; James Merryweather, R.F.; Dreadnought, S.B.; and three of Mr. Dodwell's seedlings, a C.B., P.B., and S.F.—a good stand, rich in purple flakes. 3rd, Mr. C. Turner, Slough, with John Ball, S.F.; Juno, P.F.; Idalia, R.F.; Gem, C.B.; Jupiter, S.F.; James Taylor, P.P.B.; Ben Simonite, S.B.; Jessica, R.F.; John Hines, S.B.; Matador, S.F.; Mars, S.B.; Sporting Lass, P.F.; Flirt, S.F.; Lady Peel, P.F.; Mercury, S.B.; Tietjens, S.B.; John Burnett, S.B. 4th, Mr. Hooper, Vine Nursery, Bath. 5th, Mr. J. Hines, 81 Bramford Road, Ipswich.

Class B. 12 *blooms, dissimilar.*—1st, Mr. E. S. Dodwell, with Master Fred, C.B.; James McIntosh, S.B.; Harrison Weir, P.P.B.; John Ball, S.F.; Fred, S.B.; Thomas Moore, C.B.; Mrs. Tomes, R.F.; George, S.B.; Squire Penson, P.P.B.; Arthur Medhurst, S.B.; Harry Turner, S.B.; and Squire Llewelyn, P.P.B. —all fine flowers of Mr. Dodwell's own raising, and remarkably stout, fresh, clean blooms, well arranged. 2nd, Mr. Douglas, with Fred, S.B., the premier flower; James Douglas, P.F.; John Keet, R.F.; Clipper, S.F.; Sibyl, R.F.; Dreadnought, S.B.; John Bayley, S.F.; J. D. Hextall, C.B.; Florence Nightingale, P.F.; and three of Mr. Dodwell's seedlings. 3rd, Mr. J. Matthews, Wandsworth Road, S.W., with Shirley Hibberd, C.B.; Mercury, S.B.; Arthur Medhurst, S.B.; Mrs. Gorton, C.B.; R. Lord, S.B.; Mrs. Tomes, R.F.; Unexpected, P.P.B.; Annihilator, S.F.; Sarah Payne, P.P.B.; George, S.B.; John Keet, R.F.; and Admiral Curzon, S.B. 4th, Mr. J. Hines. 5th, Mr. John Buxton, Manor Street, Clapham. 6th, H. K. Mayor, Esq., Winchmore Hill, N., (Mr. Duffield, gr.)

Class C. 6 *blooms dissimilar.*—1st, Mr. Arthur Medhurst, Clapham, with Dr. Cronin, C.B.; John Bayley, S.F.; Arthur Medhurst, S.B.; Fred, S.B.; Mrs. Gorton, C.B.; and George, S.B. 2nd, Mr. V. P. Healy, with Othello, S.B.; G. F. Wilson, P.F.; Stanley Hudson, C.B.; Titian, S.B.; John Buxton, S.B.; and Bayley, jun., S.F. 3rd, James P. Sharp, Esq., Perry Bar, Birmingham, with James Taylor, P.P.B.; Sir J. Paxton, S.B.; Clipper, S.F.; J. Douglas, P.F.; Dr. Forster, P.F.; and J. Merryweather, R.F. 4th, E. H. Allen, Esq., St. John's, Putney Hill. 5th, Master Harry Matthews, Wandsworth Road, S.W.

Class D. *Single specimens. Scarlet Bizarres:* 1st, Mr. Turner, with George; 2nd, Mr. Douglas, with Robert Lord; 3rd, Mr. E. S. Dodwell, with Arthur Medhurst, and 4th, with George; 5th, Mr. Douglas, with Dreadnought.

Crimson Bizarres: 1st, Mr. Douglas, with John Simonite; 2nd, with Crimson Banner; 3rd and 5th, with Lord Milton; 4th, Mr. Dodwell, with Rifleman.

Pink and Purple Bizarres: 1st, Mr. Douglas, with Sarah Payne; 2nd, Mr. Dodwell, with Sarah Payne; 3rd, Mr. Douglas, with Miss Henderson (Dodwell); and 4th and 5th, with Albion's Pride.

Purple Flakes: 1st and 2nd, Mr. Douglas, with Florence Nightingale; 3rd, Mr. Turner, with Lady Peel, and 4th, with Sporting Lass; 5th, Mr. Douglas, with Florence Nightingale.

Scarlet Flakes: 1st and 2nd, Mr. Turner, with Matador; 3rd, Mr. Dodwell, with a seedling; 4th, Mr. Douglas, with Sportsman, and 5th, with John Bayley.

Rose Flakes: 1st, Mr. Douglas, with Sibyl; 2nd, Mr. Turner, with John Keet; 3rd, Mr. Douglas, with John Keet; 4th, Mr. Dodwell, with James Merryweather; 5th, Mr. Turner, with Jessica.

The Premier Carnation, selected from the whole exhibition, was a splendid bloom of Fred (Dodwell), S.B., staged in Mr. James Douglas's stand of twelve.

PICOTEES.

Class E. 24 *blooms,* 12 *dissimilar.*—1st, Mr. James Douglas, with Mrs. Chancellor, H.P.; Clara Penson, L.P.; Brunette, H.R.; Clara, L.R.; Thomas William, L.R.; Mrs. Niven, H.P.; Her Majesty, L.P.; Edith D'Ombrain, H.RO.; Ann Lord, L.P.; Royal Visit, H.RO.; Ethel, L.RO.; Mrs. Bower, L.R.; Mrs. Payne, M.RO.; Jessie, L.P.; Princess of Wales, H.R.; Mrs. Gorton, L.R.; J. J. Bryant, H.R.; Norfolk Beauty, H.P.; and Nymph, L.P.—these were large magnificent flowers, in fine condition. 2nd, Mr. Turner, with Mrs. Chancellor, H.P.; Thomas Jivens, L.R.; Constance Heron, H.S.; Dr. Abercrombie, H.R.; Her Majesty, L.P.; Royal Visit, H.RO.; Beauty of Cheltenham, L.P.; Lady Louisa, H.RO.; Mrs. Payne, H.RO.; Picturata, H.R.; Clara Penson, L.P.; Tinnie, L.P.; Dr. Epps, H.R.; Baroness Burdett Coutts, M.P.; John Bolton, L.RO.; and Edith D'Ombrain, H.RO. 3rd, Mr. E. S. Dodwell, with Jessie, L.P.; Royal Visit, H.RO.; Alliance, H.P.; Edith D'Ombrain, H.RO.; Emily, M.P.; Mrs. Summers, H.P.; Ann Lord, L.P.; Master Norman, H.R.; Morna, H.R.; Zerlina, H.P.; Lady Louisa, H.RO.; Cynthia, L.P.; Mrs. Dodwell, H.R.; William Summers, H.R.; Miss Lee, M.RO.; and Muriel, H.P. 4th, Mr. H. Hooper, Bath.

Class F. 12 *blooms, dissimilar.*—1st, Mr. Douglas, with Clara Penson, L.P.; Brunette, H.R.; Jessie, L.P.; Princess of Wales, H.R.; Mrs. Chancellor, H.P.; Mrs. Payne, H.RO.; Royal Visit, H.RO.; Mrs. Gorton, L.R.; Mary, L.P.; Mrs. Niven, H.P.; Violet Douglas, L.P.; and Rosy Morn, H.R. 2nd, Mr. E. S. Dodwell, with Zerlina, H.P.; Morna, H.R.; Alliance, H.P.; Dr. Epps, H.R.; Muriel, H P.; Elsie Grace, L.R.; Miss Lee, M.RO.; Lizzie Tomes, M.P.; Royal Visit, H.RO.; Medina, H.P.; Minnie, L.P.; and Edith D'Ombrain, H.RO. 3rd, Mr. J. Matthews, with Edith D'Ombrain, H.RO.; Mrs. Dodwell, H.R.; Alliance, H.P.; Royal Visit, H.RO.; Mrs. Nicholl, L.RO.; Thomas William, L.R.; J. B. Bryant, H.R.; Minnie, L.P.; Tinnie, L.P.; John Smith, H.R.; William Summers, H.R.; Countess of Wilton, H.R. 4th, Mr. J. Hines. 5th, Mr. John Buxton. 6th, H. K. Mayor, Esq., (Mr. Duffield, gr.)

Class G. 6 *dissimilar.*—1st, Mr. A. Medhurst, with Zerlina, H.P.; Edith D'Ombrain, H.RO.; Mrs. Dodwell, H.R.; Royal Visit, H.RO.; Lizzie Tomes, M.P.; and Ann Lord, L.P. 2nd, J. P. Sharp, Esq., with Edith D'Ombrain, H.RO.; Her Majesty, L.P.; Emily, M.R.; Lucy, L.RO.; Mrs. Allcroft, L.RO.; and a seedling. 3rd, E. H. Allen, Esq., with Violet Douglas, L.P.; Mrs. Nicholl, L.RO.; Fanny, L.P.; Brunette, H.R.; Tinnie, H.P.; and J. B. Bryant, H.R. 4th, Mr. V. P. Healey. 5th, Master H. Matthews.

Class H. *Single Specimens.—Red, heavy-edged:* 1st, Mr. Brown, Handsworth, Birmingham, with Emmelina; 2nd, Mr. Douglas, with J. B. Bryant; 3rd, Mr. Turner, with Picturata; 4th, Mr. Hines, with Mrs. Summers; 5th, Mr. Dodwell, with Brunette.

Red, light-edged: 1st, 2nd, 3rd, and 4th, Mr. Douglas, with Thomas William; 5th, Mr. Turner, with Rev. F. D. Horner.

Purple, heavy-edged: Mr. Turner took all the five prizes, with Mrs. Chancellor.

Purple, light-edged: 1st, Mr. Douglas, with Clara Penson, and 2nd, with Her Majesty; 3rd, Mr. Dod-

well, with Ann Lord; 4th, Mr. Dodwell, with Minnie; 5th, Mr. Turner, with Baroness Burdett Coutts.

Rose or scarlet, heavy-edged: 1st and 2nd, Mr. Turner, with Fanny Helen, and 3rd, with Constance Heron; 4th, Mr. Hines, with Mrs. Allcroft; 5th, Mr. J. P. Sharp, with a seedling.

Rose or scarlet, light-edged: 1st, Mr. Sharp, with Mrs. Allcroft; 2nd, Mr. Turner, with Evelyn, 3rd, with Lucy, and 4th, with Evelyn; 5th, Mr. Hooper, with Lucy.

Yellow grounds: 1st, Mr. Douglas, with Prince of Orange, and 2nd, with Princess Beatrice; 3rd and 4th, Mr. Hooper, with Countess of Pembroke; 5th, Mr. Douglas, with Princess Beatrice.

The Premier Picotee was a magnificent flower of Mrs. Chancellor, heavy purple, shown by Mr. Douglas in his stand of twenty-four.

SELFS, FANCIES, &c.

Class I. 24 *blooms*, 12 *dissimilar*.—1st, Mr. Turner, with Eurydice, Constanee, Cremorne, Captain Dalgety, George, Arthur Medhurst, Duchess of Edinburgh, Mrs. Willis, Géant des Batailles, Titian, Java, John Burnett, Mrs. G. P. Hawtrey, yellow, Elegant, Rembrandt, and the rest seedlings. 2nd, Mr. James Douglas. 3rd, Mr. J. Matthews. 4th, Mr. H. Hooper.

Class K. 12 *blooms, dissimilar*.—1st, Mr. E. S. Dodwell. 2nd, Mr. A. Medhurst. 3rd, Mr. Duffield. 4th, Mr. Cattley. 5th, Dr. Abercrombie, Cheltenham.

Class L. 12 *yellow grounds*, 6 *dissimilar*.—1st, Mr. Douglas, with Prince of Orange, Beatrice, Eleanor, Mrs. Coleman, James Tait, Alice, Lightning, and five duplicates. 2nd, Mr. H. Hooper. 3rd, Mr. Cattley, Bath.

Class M. 12 *plants, dissimilar, in* 8-*in. pots*.—1st, Mr. Turner, with well-bloomed plants of John Burnett, Rifleman, Lady Carington, Rembrandt, Louisa, Dr. Abercrombie, Tinnie, George, Clara Penson, Royal Visit, Constance Heron, Dr. Epps, Jupiter, Mrs. A. Chancellor, and Mrs. Payne. 2nd, Mr. Douglas.

SEEDLING PRIZES.

For the seedling prizes, offered for varieties not previously so rewarded in S.B.'s, Mr. Dodwell was 1st and 2nd, with Harry Turner and James McIntosh respectively, both of great excellence, possessing, with rich colours and fine white grounds, great refinement and stout substance. In C.B.'s the same exhibitor was 1st and 2nd, with Squire Penson and Harrison Weir, both flowers of excellent properties, and worthy the names given to them.

Mr. Douglas won the first prize in the Pink and Purple Class, with a seedling of Mr. Dodwell's named Miss Henderson, a chaste and lovely flower, an acquisition undoubtedly to a class hitherto limited in number. No second prize was awarded. In Scarlet Flakes, Mr. Dodwell was 1st, with Harry Matthews, a seedling from Curzon, with very rich, dark markings; Mr. Turner 2nd, with Matador. In Rose Flakes, one prize only was awarded, the 1st to Mr. Dodwell, for Mrs. Matthews, a seedling from John Keet, which it follows in character, but with a deeper cherry-rose colour.

In Picotees, the number produced was limited, and three prizes only were awarded. In light reds: 1st to Mr. Dodwell, for Elsie Graee, a seedling from Mary, light purple, which it follows in form of petal and habit; and 2nd, to Mr. Douglas, for Mrs. Gorton, a seedling raised by Mr. B. Simonite, and which sustains the character assigned to it, when shown at Manchester in 1876. Now that it has the advantage of the pure, bracing air of Loxford, we hope soon to hear Mr. Simonite may have stock to distribute to his brother-florists. In light roses, the 1st prize went to Mr. Turner, for Evelyn, which certainly not only deserved this, but the first prize in the class, which, to our surprise, was given to a not over fine specimen of Mrs. Allcroft. As this was the only thing we thought unwarranted in so large a show, we should not make the remark, and we should have no justification in doing it, save that the award, to those who had no opportunity of inspecting the flowers shown, might seem to place Evelyn on a lower level than its intrinsic properties entitle it to.

The attendance of the leading florists of the north-west and the midlands evidenced great enthusiasm, and despite the exceeding heat, a very happy day, rich in floral communion, was spent. Mr. Hibberd's lecture, which we give on another page, was most interesting, and was listened to with unbounded satisfaction; and altogether, notwithstanding the pity which some of our friends affect to feel for the poor florist, there was overpowering evidence that his pursuit gave unqualified delight, a delight, we venture to say, as full of elevating influences as of enjoyment.

The show was largely aided by contributions, not for competition, sent by Messrs. Veitch and Sons, of Chelsea, showing what may be done with these lovely flowers in the atmosphere of towns; by Verbenas, from Messrs. H. Cannell and Sons, Swanley, Kent; and by Roses from the Cranston Nursery Company, Hereford. These collections attracted, as they deserved, universal notice, and were worthy of the contributors.

The judges in the open classes were Mr. W. M. Hewitt, Chesterfield; Mr. Thomas Moore, Chelsea; Mr. John Fraser, Lea Bridge; and J. T. D. Llewelyn, Esq., Penllergare; in the amateurs' division, Mr. Charles Turner, Mr. John Ball, and the Rev. F. D. Horner; and for single specimens, Mr. Simonite, Mr. Lord, Mr. Rudd, and Mr. Kirtland.

At some future time, we hope to give extracts from notes we have taken, and trust yet to take, of the best things of the season.—D.

SUBURBAN GARDENING.

AUGUST.—This is a dry summer, and the watering-pot needs to be in constant requisition. It is a general drought; and as a consequence, garden crops are short-lived, and some things are nearly dried up before they reach maturity. It is a season needing all the care and attention of the gardener to make his garden as productive as he would wish it to be.

Kitchen Garden.—Some important sowings must be made this month. Some *Endive* and *Winter Spinach*, successional sowings of *Radishes* and *Small Saladings;* towards the end of the month a little *Cauliflower* for planting under hand-lights and for winter storing; also *Bath Cos* and *Hardy Cabbage Lettuce* to stand through the winter. *Tripoli Onions* should also be sown for spring use, and some *American* and *Australian Cress* by those who like them. Any ground becoming vacant should be planted with *Cabbages, Coleworts, Savoys*, and *Kales*. *Celery* needs close attention; it should be well supplied with water, and occasional doses of liquid manure—some

growers put a little salt into the water before using it; after a good soaking of water is given, the plants should be earthed-up. The hoe is the most useful tool that can be employed in the garden during dry weather, as it keeps the surface of the soil loose, and the effects of the drought are not so much felt in consequence by advancing crops.

Fruit Garden.—As soon as a good soaking of rain falls, new plantations of *Strawberries* should be made. Those layered in pots are to be preferred; failing these, use the strongest and earliest runners. It is often advisable to change the soil and situation of Strawberry beds; but as this cannot be done to any great extent in a small garden, the next best thing to do is to take away a portion of the old soil, and put in its place some strong fresh loam and rotten dung. In planting, take care to keep the crowns well above the surface, as upon this depends, to some extent, the productiveness of the plants. Insects are very troublesome to Fruit-trees, owing to the drought. The Plum-trees especially are much affected with a yellow blight, that is injurious to their well-being. Constant war must be waged by the gardener, and by the use of Gishurst compound and other insecticides, and the frequent use of the syringe, something may be done to keep the pests in check. *Raspberry* canes should be thinned out to ripen the wood, and the shoots of the autumn-bearing sorts be carefully tied up to stakes. *Morello Cherries* and late *Gooseberries* and *Currants* should be netted, to preserve the fruit for later use.

Flower Garden.—The recent rains having given the plants a good start, care must be taken to keep them growing. A good top-dressing of cocoa-nut fibre will mitigate the effects of drying influences, and give the beds a tidy appearance. When bedding-plants are allowed to suffer from drought, the leaves speedily become discoloured, and the effect of the beds spoilt. A few yards of hose attached to a stand-pipe is of great service in a garden, and spares much manual labour. As the burning sun soon scorches the flowers, these should be picked off as often as convenient, and it is now a daily occupation. All trailing plants used in beds should be pegged into their places, so that the shoots may fill out the beds as speedily as possible. *Clematises*, *Roses*, and other *Creepers* against walls, trellises, &c., are liable to feel the drought very much, and need to be kept well watered, and the roots mulched with manure, &c. And as storms may perchance follow the hot weather, such tall-growing plants as *Hollyhocks*, *Dahlias*, *Delphiniums*, *Phloxes*, *Lilies*, &c., should be firmly secured to stakes, so that they be saved from damages. There is still time to raise a stock of *Hardy Perennials* for next season, but the seed should be sown without delay. The most useful are *Antirrhinum*, *Delphinium*, *Dianthus*, *Lupinus*, *Phlox*, *Potentilla*, *Polyanthus*, *Alpine Auricula*, *Sweet William*, and *Wallflower*. In places where the grass-plat is suffering from drought, occasional waterings should be given.

Greenhouse.—Here also the watering-pot must be in constant use. The house should now be at its gayest, but some forethought is required to bring on plants for succession. The *Chrysanthemum* will have to play an important part by-and-by, and the plants that are being brought on in pots should have the best possible attention. Now is the time to have a few *Hardy Evergreen Shrubs* potted up for winter, so that an unheated greenhouse may not be without something cheerful at that season. *Aucubas*, *Retinosporas*, *Veronicas*, &c., are all very useful for this purpose. *Pelargoniums* that have been pruned back and rested should be repotted, as soon as they commence to break into growth. They should be put into the smallest pots into which their roots can be got, so as to allow of another shift or two before they are placed in their blooming pots. Some of the prettiest subjects for flowering in the greenhouse at this season of the year are *Ivy-leaved Pelargoniums*, both double and single. There is now a good variety of these, and it is not difficult to grow them. The syringe should be frequently employed, and shade given to the greenhouse by day.

Cold Frames.—All pots of cuttings, and also pots and pans planted with seedlings from the seed-pans, should be carefully watered, and kept shaded from the sun. All newly-potted hardy plants will be benefited by gently sprinkling overhead, as they also keep the soil on which the pots are standing damp and cool. The plants should be looked over occasionally, so that in any cases where the soil has become sour through insufficient drainage, the same may be rectified.—SUBURBANUS.

— MESSRS. CANNELL AND SONS have bloomed and exhibited the new DOUBLE WHITE BOUVARDIA, named ALFRED NEUNER. It is exceedingly pretty, and must become very popular. The habit of this plant is, like that of the other garden varieties, free and vigorous, with abundant flowers, and these are pure white, and neatly and fully doubled. It is so remarkably floriferous, that nearly every shoot bears a truss of bloom. It will be especially valuable for bouquet purposes, especially for button-hole bouquets.

— FLOWERS of a very good strain of SWEET WILLIAMS were sent us a short time since by Messrs. Daniel Bros., of Norwich, as a sample of the strain they are growing to produce this year's crop of seed.

2

W. H. Fitch. del

Chromo. P. Stroobant, Chent.

Pelargoniums

1, Madame Thibaut. 2, Lucie Lemoine

NEW FRENCH PELARGONIUMS.

[Plate 545.]

THE influence of the Pelargonium Society seems to have worked a sort of revival amongst these showy flowers, the exhibition varieties of which, of the large-flowered type, had, to a great extent, lost their original vigour of growth, and with it the capacity to show a fine head of bloom. Of late years there has gradually sprung up a race of these large-flowered sorts which are called "decorative" varieties, and which possess great constitutional vigour, producing a crowd of well-filled flower-trusses, and displaying rich and effectively marked blossoms, which, though less correct in form than the typical show kinds, have, to a considerable extent, usurped their place for the ornamentation of the greenhouse, and have even edged their way amongst the foremost sorts on the exhibition stage. Another off-shoot of the old show type has also appeared in what are known as the "regal" type, consisting of varieties possessing extreme vigour of growth, large flower-trusses, striking colours, and individual blossoms which have their petals so much imbricated and interfolded, that they have the appearance of forming double flowers. Both the "decorative" and "regal" varieties are at present in high favour amongst cultivators.

Classed temporarily with the last named, though presenting considerable difference of character and aspect, is a race which appears to have originated with M. Lemoine, of Nancy, and which approaches the *Geranium* proper, in having the petals almost uniform in contour, colour, and marking, forming a circular mallow-like flower, and which, for want of a better name, might be called the Malvoid type. These are mostly dwarf-growing and sturdy in habit, and very free-blooming, so that they are showy in character, and much esteemed by cultivators, both for exhibition and for ornamental purposes. Our plate represents two of these varieties, sketched by Mr. Fitch in Mr. Bull's extensive and varied collection—two varieties which are likely to become very popular amongst growers for exhibition, and to be held in favour also in private gardens, and by amateurs having a taste for choice flowers of varied character.

Fig. 1 represents Madame Thibaut, a variety which, it will be seen, is of a delicate, salmony pink, with a white margin to the petals and a white centre; it is a very striking and effective variety, when skilfully cultivated. Fig. 2 is named Lucie Lemoine, and, as represented, has circular flowers, which are almost pure white, and as such, not only strikingly dissimilar from other sorts when seen upon the plant, but also, on account of their pure white colour, valuable for bouquet work. The plant is of healthy growth and a free bloomer. Both sorts can be recommended for their utility as decorative and as exhibition plants, also for their novelty and distinctness of character. —T. Moore.

THE PECULIARITIES OF GRAPES.

THERE are but few Grapes that are not subject to certain diseases or do not present difficulties of culture peculiar to themselves. To discover what these are, and the proper remedies for them, is not the least important part of the Grape-grower's duties and qualifications. Some of these diseases are deep-seated and mysterious, at least I find them so, and I mean to touch on such of them as I do not understand, in the hope that some of the readers of the Florist and Pomologist may be able to throw some light on them.

To begin with *Lady Downe's*—which is still in my opinion our very best late Grape. It is a vigorous grower, shows fruit freely, and at a temperature of 70° sets plenty of fruit, and goes on well till the close of the stoning period, just before it begins to change colour, when all the abnormally large berries in many of the bunches get black on one side suddenly, and rot off. A diagnosis of such berries shows that they nearly all have five stones in them, and two of these are in contact with each other. It is on the side where they are in contact that the disease begins. I have found others with only four stones or seeds that have also gone wrong; two, however, being in contact having no flesh between them. Rarely have I found a medium-sized berry go wrong as described, and never a seedless berry. I have occasionally found a

large berry with only three seeds go wrong; and in rarer cases still, I have found them do so when none of the seeds have been in contact with each other.

The conclusion I have come to in regard to this matter is, that while large berries with five seeds are most liable to go wrong, especially when two of the seeds are in close contact, they are not alone so, and the cause must be sought for elsewhere.

This disease must not be confounded with what resembles it a good deal, namely, the scalding of the berries by direct exposure to the sun, the remedy for which is very simple —shade and more air.

Gros Colmar.—This is a free-growing vine, that fruits abundantly, but it, too, has its peculiarities. In certain soils it is very difficult to colour well, and in others the foliage puts on a peculiar bronzy and decayed-looking aspect, indicating that some constituent of its proper food is absent. It is most liable to become so, when planted in light soil. Its greatest drawback, however, is that it is very difficult to colour well, and takes a long time to do so.

Alnwick Seedling.—This otherwise fine Grape does not always set well under the most careful treatment. I saw a house of it last year at Clive House, Alnwick, in excellent condition; every bunch perfect, many of them from 3 lb. to 5 lb. in weight, as black as sloes, and I felt disposed to extend its cultivation here. I had inarched vines of it on various stocks a year before, and had in 1880 four bunches of small size, every berry of which had set to perfection. These vines made extraordinarily fine canes that season, and this spring they showed an immense amount of fruit. I took every known precaution to induce them to set, but failed to set more than a few berries in any one bunch. The bunches when in bloom developed a peculiarity I have only seen in one case besides, namely, in the Canon Hall Muscat. Each embryo berry had a very small drop of liquid on the point of the female organ the moment the cap dropped off, and this seemed to prevent the legitimate action of the pollen. In using an ostrich feather to disperse the pollen, it got quite wet and sticky; some bunches I did not touch, but these met with the same result. On one very weak vine this liquid did not appear, and in its case the berries set. I am satisfied that great vigour in the Vine will result in the presence of the liquid, and when it appears, the fruit will not set well; therefore, moderate vigour, as in the case of Mr. Bell's vines, seems to be what should be aimed at, in the case of this excellent grape.

There are many other grape-vines that have their peculiarities, but I fear I have already occupied too much of your valuable space, to be able to refer to them at present.—W. THOMSON, *Tweed Vineyard, August 12th.*

VINES AND VINE CULTURE.

CHAP. XVIII.—THE VARIETIES OF GRAPES.

(Continued.)

THE descriptions of the varieties of Grapes included in our Synoptical Table are here continued, from page 77.

GROS MAROC (77).—An oval black Vinous Grape. *Synonym:* Marocain.

Vine.—Growth very strong and robust, the shoots large, but firm, and ripening freely; moderately fruitful. *Leaves* large, downy, deeply serrated.

Fruit.—Bunches medium-sized, strongly shouldered, with a stout stalk, setting tolerably freely. *Berries* large, ovate in shape, of a very dark plum-colour, with a thick bloom. *Flesh* firm, yet juicy, with a very brisk, sprightly, and exceedingly pleasant flavour.

History, &c.—Introduced in 1855 by the late Mr. Rivers from M. Vibert of Angers, this grape has remained comparatively unknown until the past year or two, when proper attention has been directed to its merits by Mr. T. F. Rivers, who obtained for it a First-class Certificate from the Royal Horticultural Society. It has been much confused with Gros Damas Noir and Black Morocco, from which, however, it is quite distinct.

Cultural Notes.—Excepting by Mr. Rivers, I am only aware of this Grape having been largely cultivated by Mr. Ward, at Bishop's Stortford. It is somewhat difficult to establish, and also to propagate, but when once established it grows vigorously.

Season.—Late.

Merits.—First-class in quality and appearance.

GROVE-END SWEETWATER (15).—An oval white Sweetwater Grape. *Synonyms:* Early White Malvasia, Early Leipsic, Burchardt's Amber Cluster, Early Kienzheim.

Vine.—Growth free and vigorous, although not robust; free-fruiting.

Fruit.—Bunches small, from 6 in. to 8 in. long, loose or straggling, setting freely. *Berries* small, ovate. *Skin* thin, very clear and transparent, greenish-white, becoming amber when fully ripe, and retaining a thin bloom. *Flesh* very tender and juicy, with a remarkably sweet, rich, and pleasant flavour.

History, &c.—This grape is so named from Grove End, St. John's Wood, the residence of a Mr. Atkinson, who imported it and grew it under that name, as described in the *Transactions of the Horticultural Society* in 1821. It was subsequently grown at

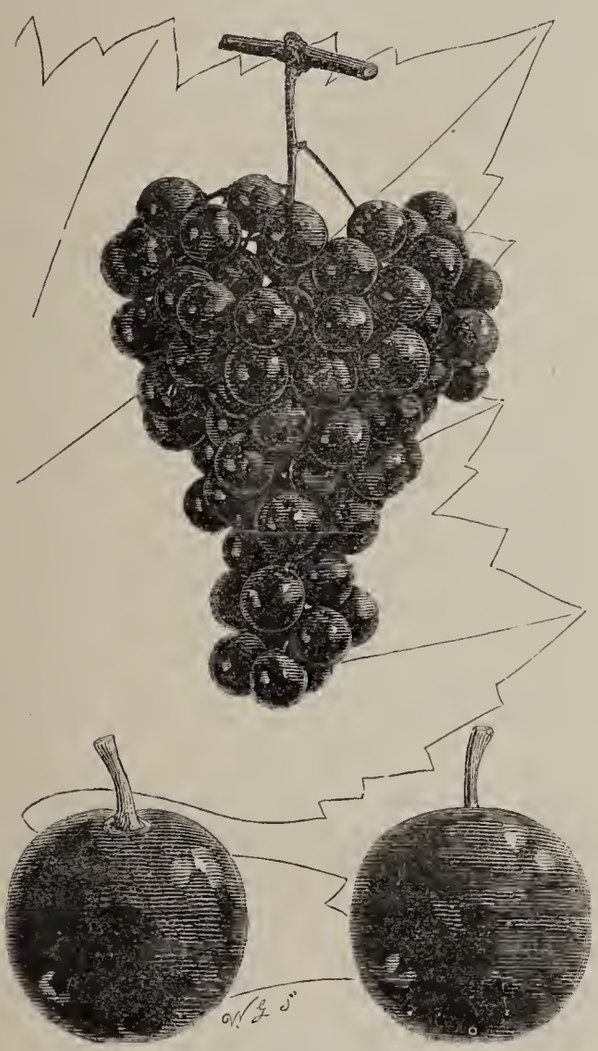
Chiswick, and sent out from there under the name of Burchardt's Amber Cluster.

Cultural Notes.—Will succeed in any vinery, and is specially well adapted for cultivation as an out-door grape.

Season.—Early; one of the earliest grapes in cultivation.

Merits.—First-class as an early out-door grape.

HAMPTON COURT.—A synonym of Black Hamburgh: which see.



JURA FRONTIGNAN.

INGRAM'S HARDY PROLIFIC MUSCAT (42).—An oval black Muscat Grape.

Vine.—Growth somewhat slender, the shoots small, but ripening freely, and moderately fruitful. *Leaves* small, rugose, deeply serrated, with reddish stalks and venation.

Fruit.—Bunches medium-sized, long and tapering, setting freely. *Berries* medium-sized, oval in shape. *Skin* quite black, with a thick blue bloom. *Flesh* firm, moderately juicy, sweet, and pleasant, with a slight trace of Muscat flavour.

History, &c.—This is a seedling, raised in 1857 by the late Mr. Ingram, gardener to her Majesty at Frogmore; and was in much repute for some years as a Grape suitable for outdoor culture, having a Muscat flavour. It is not now cultivated to any extent. See *Proceedings of Royal Horticultural Society*, i., 253, 257.

Cultural Notes, &c.—Free-growing, and fruits readily in any ordinary vinery or greenhouse.

Season.—Early.

Merits.—Second-rate.

JULY FRONTIGNAN (49).—A round black Muscat Grape. *Synonym:* Muscat de Juillet.

Vine.—Growth free and vigorous, producing small but well-ripened shoots, which fruit freely.

Fruit.—Bunches small, compact, setting freely. *Berries* small, round. *Skin* dark purple, with a thick bloom. *Flesh* very juicy, sweet and pleasant, with a slight Muscat flavour.

History, &c.—Introduced by the late Mr. Rivers.

Cultural Notes.—Very suitable for cultivation on the open wall, as it ripens early and is of good constitution.

Season.—Early.

Merits.—First-class as an out-door Grape.

JURA FRONTIGNAN (50).—A round, black Muscat Grape. *Synonym:* Muscat Noir de Jura.

Vine.—Growth moderately robust, very fruitful. *Leaves* medium-sized, very deeply cut and serrated, dying off purplish.

Fruit.—Bunches rather long and tapering, with occasionally one loose straggling shoulder, always well set. *Berries* medium-sized, round, sometimes slightly ovate. *Skin* deep purplish-black, covered with a thick grey bloom. *Flesh* tender, yet somewhat slimy, juicy, with a strong Muscat flavour.

History, &c.—Not known when introduced. It has been for many years cultivated in the collection of the Royal Horticultural Society in the great vinery.

Cultural Notes.—Will succeed in any house under ordinary treatment, and in fine seasons will ripen in the open air.

Season.—Mid-season.

Merits.—Second-rate; amongst the many excellent grapes now obtainable, this is scarcely worthy of cultivation.

KEMPSEY ALICANTE.—A synonym of Black Morocco: which see.—A. F. BARRON.

EARLY PEAS.

THE neighbourhood of Marlow is noted for early Peas, so much so, that I never found any early sorts sown in boxes and heat to come in sooner than the Marlow Peas in the open field. They grow several varieties, but the earliest appears to me to be the old Early Frame. For several years we have tried this plan, following as nearly as possible the same practice, and with the same sorts they use; but still we have been behind in gathering.

This season, finding that Dickson's First and Best comes earliest in our soil, I secured a good lot of seed in the autumn, with a view to sowing in December. The weather was against this, and no opportunity offered until the middle of January. We then got in a quarter of an acre of that sort, and of Sangster's No. 1. I had great doubts of success, as the ground was so wet and cold. In the second week of February we sowed in heat twenty boxes of

Dickson's First and Best, and planted them out in a sheltered garden, in excellent condition, staking and putting spruce-boughs on the north side. On May 28th we gathered from both. The field lot had done well, and, if there was any difference, they were a trifle forwarder than those planted out. It appears to me, therefore, that where early Peas are a consideration, we frequently treat them too liberally, by forcing growth; and this may also account for their early podding, in the dry sandy fields of Marlow.—J. FLEMING, *Cliveden.*

ROSES IN WINTER.

WE translate the following interesting paper referring to the culture of Roses during winter for market purposes, from the *Journal des Roses* (v. 63), to which publication it had been transferred from the *Lyon Horticole*:—

"The question is, how to produce Roses during winter in quantities sufficient to be remunerative. One ought mainly to cultivate the floriferous varieties, such as the Bourbon Souvenir de la Malmaison and Mrs. Bosanquet, the Indian Cramoisie Supérieure and Hermosa [Armosa], or even the Noisette Aimée Vibert. I have tried, on a small scale, with certain of these varieties, a system of culture which permits one, without much expense, to obtain Roses from the beginning of December to the end of January. This is the way I set about obtaining the flowers, principally from the Souvenir de la Malmaison, with which my experience has been gained, and which also sells best:—

"In spring, that is, at the end of February, I pot into 5-in. or 6-in. pots, according to their size, 100, 1,000, or 10,000 Rose plants. The pots are plunged, and have no further attention till the month of July, at which time they are half-raised out of the soil, and left without watering till the end of August. If rains should occur at this period, the pots are completely drawn out, and laid horizontally on the surface.

"At the end of August, I begin the important part of the work. I repot each rose-plant in a pot of rather larger size in such a manner that, not having to reduce the ball of earth about the roots, I can readily slip in the soil, which I use dry, between the sides of the pot and the roots. The largest branches are pruned but very slightly, and the repotted rose-plants are plunged afresh in the borders. If a large number of plants are cultivated, it is necessary in our climate to begin repotting at the end of August, so as to finish by the middle of September.

"The replunged rose-trees are watered copiously every other day, and also treated with dilute liquid manure, which is not stinted. Under these conditions, according to their natural habit, and influenced by the repotting, the waterings, and the manurings, each stem will develop from four to eight rosebuds.

"With the cool, fresh breezes of October, the buds will have become stationary; and before the frosts of November come on, the pots are to be moved into cool houses, from whence they must be taken, according to the demand, into a house heated to a temperature of from 10° to 15° Cent. [say, 50° to 60° Fahr.], in which the flowers will be perfectly developed. When the plants have yielded all their blossoms, they are again removed outside, and plunged where they will receive shelter from severe cold.

"On an average, 100 rose plants, well cultivated, will give 500 flowers, the sale of which should yield about £5. The plants, after blooming, can be replunged very closely together; some 40 or more can be placed within the space of a square metre [= 40 in.].—SÉB. GRIPHE.

FRUIT CULTURE UNDER GLASS.

A NEW edition of Mr. D. Thomson's *Handy Book** on this subject, enlarged and revised, has just been issued, and will be found all the more valuable for the additions which have been made to it. That it is a work thoroughly sound and reliable on the topics to which it relates goes without saying, the reputation of the author as one of our best practical gardeners being a sufficient guarantee on this point. The fruits of which it treats include the Pine-apple, the Vine, the Peach and Nectarine, the Fig, the Melon, the Strawberry, and the Cucumber. A Calendar of work relating to the forcing of these fruits occupies some forty pages towards the close of the book, and this is supplemented by a few observations on heating by Hot Water. There is, besides, a useful Index.

The object of the book is to provide a manual of moderate size comprehending the forcing of the different fruits above named, and in its preparation the requirements of in-

* *Handy Book of Fruit Culture under Glass.* By David Thomson. Second Edition. W. Blackwood and Sons, Edinburgh and London.

experienced amateurs, and of young gardeners studying their profession, have been kept specially in view. Hence we find, as might be expected under these circumstances, a clear statement in considerable detail of the treatment of each kind of fruit from babyhood to maturity; while, as regards the varieties to be grown, Mr. Thomson clearly indicates a few which he approves, instead of giving a lengthy catalogue of names.

As an example of the mode in which the subject has been treated, we may quote a portion of the author's remarks on renovating exhausted Vines. Under this head, he says (p. 106):—

"When the principal cause of exhaustion is from a cold, ill-drained soil, and where they are otherwise in such a condition that good results might be expected from them if in a more congenial border, the best way is to clear away the whole soil, disentangling and saving every root that can be saved, to make the drainage effectual, and make a new border, carefully planting the vines again. The best time for this operation is in autumn, after the grapes are cut, while the vines are still in leaf and able to make fresh roots. Supposing the vines have roots in both outside and inside borders, the one should be renewed one year, and the other the next. When the operation commences, shade the roof with canvas; and after the roots are laid in the fresh soil, give a good watering at 120°, and cover up the border with dry litter to retain the heat. In 1856, I lifted a house of vines, as thus recommended, the first week in October—only the whole instead of half the roots were lifted—and by the end of July, 1857, cut a fair crop of grapes from them. And in December of 1858 I lifted a vine after it had been three years planted, and planted it in another vinery, in which I had previously commenced the forcing of pot vines, and it ripened ten good bunches in May, 1859. These instances are mentioned to show how well vines bear being carefully transplanted or lifted."

Mr. Thomson relates at some length his experience with the *Phylloxera*, and records his conviction "that there does not exist in British gardens another insect that can be compared to *Phylloxera* in the rapidity and certainty with which its work of destruction, in the case of the Vine, is carried on, nor one that is so difficult to combat successfully." After describing its progress in the vineries under his charge, he goes on to state (p. 127) that:—

"Having decided to thoroughly stamp the pest out by removing the whole border, I did not, as usual, cover the outside border with wooden shutters early in October; and owing to the enormous rainfall of the autumn, the soil was, of course, unusually moist and cold outside. The most careful examination of the roots outside in this cold damp medium did not lead to the discovery of an insect on the roots up to the arches in the front of the house. The pest, however, was found in swarms on the roots to the very point at which they left the protection of the stone-work, where the soil was much drier, and here there was an abrupt limit to their extension. On the same roots not one was found beyond the arch, in which case it is clear they had worked from the inside along the roots, but in any case did not advance into the damp soil, proving that the insect does not like cold and wet. Prompted by this observation, some pieces of roots literally covered with the insects were steeped in clean soft-water, and they were all dead in from forty-eight to sixty hours. So that any one receiving Vines, who has any dread of this pest, would do well to steep them in a tank for four or five days. I also found that three hours' exposure to 4° or 6° frost effectually destroys it; and pieces of fresh roots densely covered with it were left, exposed to the air in the vinery, and in two days they were all dried up and dead. Roots were also done up in brown paper without any soil, and they died in the same space of time, in fact, seemed to evaporate. A few drops of carbolic acid in a wine-glassful of water proved instant death to them; and a very weak solution of Condy's fluid had the same effect. In fact, everything that I have learned of this insect goes to prove that it is very easily killed when it can be got at. . . . . The difficulty to be overcome, lies in the depth of soil to be acted on; for, if a few insects are left, the enemy remains in possession of the field. . . . . The most certain way of stamping out this destroyer is to burn the vines, remove right away all the soil, well salt the site of the border, and wash and paint everything connected with the vinery, before fresh soil is put into it."

The subjects treated on are dealt with very thoroughly, and the advice given is in every way sound and reliable, being founded on the author's own very successful practice. Hence, it may safely be recommended to all classes of cultivators who desire accurate information on this particular branch of gardening.—M.

THE METROPOLITAN ROSE SHOWS.

FIRST in point of date came that of the Royal Horticultural Society, held on June 28th. It proved too early, as the show was deficient as to the numbers, and in many cases poor as to the quality of the blooms. Mr. C. Turner, of Slough, whose flowers had both substance and colour in high perfection, carried all before him, being first in the 48 single blooms, in the 24 trebles, and in the 24 singles.

In the larger group of 48, Mr. Turner's best flowers were:—

Niphetos, Bessie Johnson, Marie Baumann, Madame Nachary, Madame Marie Verdier, Sir Garnet Wolseley, Mrs. Harry Turner, Devienne Lamy, La Rosière, Oxonian, Général Jacqueminot, Ferdinand de Lesseps, and Madame H. Jamain. Amongst his 24 trebles were good examples of Marguerite Brassac, Marquise de Castellane, Sénateur Vaisse, Duke of Edinburgh, Alfred Colomb, Avocat Duvivier, Miss Hassard, and Annie Laxton; and in his stand of 24 singles, Abel Grand, Niphetos, Charles Darwin, Maréchal Niel, Général Jacqueminot,

Ferdinand de Lesseps, Prince Camille de Rohan, François Michelon, and Marquise de Castellane were the leading flowers. Amongst the Teas and Noisettes, Mr. G. W. Piper, of Uckfield, was first for 12, with a pretty lot of small blooms, including such sorts as Madame H. Jamain, Josephine Malton, Catherine Mermet, Safrano, Marie Guillot, Niphetos, Jean Ducher, Marie Van Houtte, Comtesse Riza du Pau, and Souvenir de Paul Neyron. For 6 blooms of any one sort of Hybrid Perpetual, Mr. B. R. Cant was first, with A. K. Williams; and in the corresponding class for a Tea or Noisette the same exhibitor took the first prize, with Devoniensis. In the Amateurs' classes for 6 single blooms of any Hybrid Perpetual, the Countess of Leven and Melville (Mr. Barry, gr.) was first with François Michelon. For 6 new Roses of 1878-9, Mr. Turner was first, with Duchess of Bedford, Charles Darwin, Countess of Rosebery, Paul Jamain, Madlle. Eugénie Verdier, and Mrs. Harry Turner.

The National Rose Society held its show at the Crystal Palace on July 2nd. The show was fairly well filled and generally good, though the date was full early, which was, perhaps, the reason why the nurserymen's flowers were not up to the usual degree of merit; as it was, they were quite beaten by the amateurs, some of whom showed in excellent style.

In the Nurserymen's Division, Mr. B. R. Cant, of Colchester, took the 1st prize for 72 singles, 48 trebles, and 24 trebles; his best flowers, in the stand of 72, being Duke of Edinburgh, Constantine Tretiakoff, Sophie Coquerelle, Madame Car. Kuster, Madlle. Marie Cointet, Annie Laxton, Devoniensis, Général Jacqueminot, Mons. E. Y. Teas, Ed. Morren, Souvenir d'Elise Vardon, Prince Arthur, Baroness de Rothschild, Dupuy Jamain, and Marquise de Castellane. In the 48 trebles, Catherine Mermet, Mdlle. M. D'Ombrain, Madame F. Jamain, Louis van Houtte, Countess of Rosebery, Exposition de Brie, Madame P. Langier, Le Hâvre, Rubens, and Elie Morel were in good condition.

For 24 Teas or Noisettes, Mr. G. Prince, of Oxford, was 1st, with medium-sized clean blooms of the following, amongst other sorts:—Madame Villermoz, Catherine Mermet, Souvenir de Madame Pernet, Perle des Jardins, Belle Lyonnaise, Homère, Innocente, Pirola, Souvenir d'Elise Vardon, Anna Olivier, Rubens, and Souvenir d'un Ami.

In the Amateurs' Classes, Mr. R. N. G. Baker, of Heavitree, was a long way ahead of the other competitors in the classes for 48 singles, 24 singles, and 12 trebles, the flowers being of extraordinary size, and remarkable for freshness and brilliancy of colour. The best blooms in his several stands were those of Marquise de Castellane, Duke of Edinburgh, Duchesse de Caylus, Mons. E. Y. Teas, Etienne Levett, Thomas Mills, Madame H. Jamain, Ferdinand de Lesseps, Alfred Colomb, A. K. Williams, Dr. Andry, Madame A. Lavallée, Dupuy Jamain, Beauty of Waltham, Comte de Raimbaud, Auguste Rigotard, Marguerite de Brassac, Marie Baumann, Penelope Mayo, La France, Mdlle. Mario Rady, and Hippolyte Jamain. For 12 Teas or Noisettes, Mr. C. Davies, of Aynhoe, was 1st, with fine fresh blooms of Maréchal Niel, Mons. Furtado, Catherine Mermet, Belle Lyonnaise, Madame Caroline Kuster, Marie van Houtte, Souvenir de Paul Neyron, Comtesse Nadaillac, Souvenir d'un Ami, Jean Ducher, and Niphetos.

For 12 new Roses, not in commerce previous to 1878, Mr. Turner and Messrs. Paul and Son were awarded equal 1st prizes. The best blooms were those of Charles Darwin, Harrison Weir, Jules Finger, Wilhelm Koelle, a promising flower of the Marie Baumann type; Mrs. Harry Turner, Countess of Rosebery, very fine; Barthélemy Levet, a very good peach-pink; Duchess of Bedford, Egeria (Bennett), pink; Dr. Sewell, very dark; Madame Morane, rose-pink; and Madlle. Eugénie Verdier. Mr. Turner was the only exhibitor of any new seedling Roses not yet in commerce or announced, and took a 1st prize, with General Roberts, a very good dark red, with good bold foliage. The Silver Medals offered for best blooms were awarded to A. J. Waterlow, Esq., Reigate, for Marie Rady, the best H.P.; to Mr. C. Davis, Aynhoe, for Catherine Mermet, the best Tea; and to Mr. G. Prince, for Maréchal Niel, the best Noisette.

The show of the Royal Botanic Society on July 6th was of limited extent, though the flowers were good. The 1st prizes were awarded to Mr. B. R. Cant, for 48 singles; to Mr. Turner, for 24 trebles; and in the Amateurs' class, to Mr. G. W. Moorman, Coombe Bank, for 24 trebles.

The show at the Alexandra Palace on July 9th was well filled, and the display was altogether of a superior character, the competition being keen, and the quality of the flowers much improved by the rain of the previous week. There was also a very effective display of four competing groups of a thousand rose-blossoms, set up with more or less design and taste, which formed a novel and imposing feature, and added much to the interest of the show, at the close of which the flowers exhibited in these particular groups were sold to the visitors. This novel feature made the show, as a whole, one of the prettiest we have seen; indeed, it needed only a little more refinement in the staging to have been a perfect success.

In the class for 72 singles, Mr. B. R. Cant, of Colchester, was 1st, the varieties shown being Princess Beatrice, Marie Baumann, Madame Alice Durcau, Thomas Mills, Niphetos, Dr. Andry, Marquise de Castellane, Duke of Edinburgh, Madame Caroline Kuster, Comtesse d'Oxford, La Boule d'Or, Le Hâvre, Madame Nachury, Dr. Sewell, Souvenir de la Malmaison, Duke of Wellington, John Hopper, Fisher Holmes, Marguerite de St. Amande, Prince Arthur, Madame Bravy, Magna Charta, Jean Ducher, Emily Laxton, Innocente Pirola, Sénateur Vaisse, Catherine Mermet, Madame Prosper Laugier, Comtesse de Nadaillac, Countess of Rosebery, Abel Grand, Madlle. Annie Wood, Comtesse de Serenye, Madame Clémence Joigneaux, Pierre Notting, Oliver Delhomme, Baroness Rothschild, Horace Vernet, Madame Ferdinand Jamain, Madame Etienne Levet, Jules Chrétien, Ville de Lyon, François Louvat, Victor Verdier, Reynolds Hole, Pitero, Alfred K. Williams, Souvenir d'Elise Vardon, Madame Charles Meurice, Dupuy Jamain, Baron de Bonstetten, Madlle Eugénie Verdier, Louis van Houtte, La Duchesse de Morny, Madame Charles Wood; Comtesse de Paris, very fine; Abel Carrière, Madame Hippolyte Jamain, Ferdinand de

Lesseps, Boieldieu, Alfred Colomb, Maréchal Niel, Prince Camille de Rohan, Captain Christy, Xavier Olibo, Souvenir d'un Ami, Star of Waltham, M. Etienne Dupuy, and Antoine Ducher. The Amateurs' classes were led off by Mr. T. Jowitt, of Hereford, who showed very fine flowers. Amongst New Roses not in commerce, Mr. Cant was 1st for six trusses, with Sir Evelyn Wood, H.P., a seedling with rose-coloured blooms suffused with purple; Mr. Turner 2nd, with Alice Turner, H.P., pure bright rose, very soft in colour; the Cranston Nursery Co. 3rd, with Mary Pochin, H.P., a red-centred flower, with the outer petals shaded violet-purple. Mr. B. R. Cant's box of Marie Baumann was the best in the class for 20 trusses of dark Roses; Messrs. Paul and Son's Souvenir de la Malmaison the best in the light-coloured class; and the Cranston Co.'s Baroness Rothschild the best pink.

VRIESIA GLAZIOVEANA.

FOR the use of the accompanying figure of this noble Bromeliad we are indebted to the authorities of the *Revue Horticole*, in which work, at p. 50 of the present year's volume, is published a coloured figure of a portion of the plant. The woodcut represents the entire plant, one-eighteenth the natural size, as it flowered recently in the gardens of the Luxembourg. By some authors it has been called *Glaziova insignis*.

This majestic plant is of yucca-like habit, attaining 6 feet or more in diameter, the trunk being very robust. The leaves are regularly acuminate, and between 2 feet and 3 feet in length; and from their centre rises the flower-stem, which is very stout, 5 feet in height, furnished at its base with concave, acuminate, bracteal leaves, of a very pale, almost transparent, green, and terminating in a chandelier-like panicle, which is broadly and bluntly pyramidal, upwards of $2\frac{1}{2}$ feet in height, and almost the same in breadth at the base; the flowering branches being spread out, gracefully arched, and bearing on their upper side, in the axils of reddish bracts, the large white recurved-petaled flowers, which have the stamens and pistils projecting.

The plant had previously flowered in Europe

only in the Imperial Garden of Vienna, in 1874, under the care of Mr. F. Antoine, a good representation of Mr. Antoine's plant, from a photograph, being given in the *Gardeners' Chronicle*, N.S. iii., 234. This, according to M. Morren, the highest living authority on this order of plants, is the same as *regina*, and has been called *Tillandsia* (*Vriesia*) *gigantea*. It is a native of Brazil.—M.

THE CULTURE OF WALL-FRUITS.

CHAP. XXIV.—THE PEAR.

IN treating on the culture of the Pear as a wall fruit, so many considerations, bearing either directly or indirectly on the subject, become so impressed upon the mind, that it would seem to be injudicious to endeavour to lay down a hard-and-fast line of practice, since there is probably no other kind of fruit so much affected, in respect to the quality of the fruit, both as regards flavour and appearance, by the various conditions of soil and climate in which it may happen to be placed. There can be no doubt but that many sorts are greatly improved, both in quality and appearance, by a judicious course of culture against walls. Of others, again, although much improved in size and appearance by the same mode of culture, it cannot be denied that it is at the expense of flavour, and that far more highly-flavoured fruit of certain sorts may be obtained from Dwarf Pyramids or Standards, than from walls. At the same time, it must be owned that this improved quality is too often accompanied by a deficiency in regard to that clear skin and tempting appearance which render them so desirable as dessert fruit. Examples of what I refer to in regard to improvement in size and appearance, but not in flavour, by wall culture, may be found in such old sorts as Beurré Diel, Bezi d'Esperen, Easter Beurré, and Knight's Monarch. On the contrary, Glou Morçeau, Doyenné du Comice, Louis Bonne of Jersey, Duchesse d'Angoulême, Williams's Bon Chrétien, Marie Louise, &c., are familiar examples of sorts that retain their exquisite flavour under wall culture, whilst at the same time they gain greatly in size and clearness of skin. It will, I think, be generally allowed that these effects are very much influenced by conditions of climate, soil, drainage, moisture, and stock. In dealing with the subject we cannot, then, lightly pass over these points, since they must form the groundwork of our practice, wherever we have to resort to artificial means to produce in a border a medium somewhat approximating to those natural conditions under which, without any preparation, they are found to flourish best, and to become large, healthy, and fruitful. This, so far as my own observation goes, will generally be found, where there is a deep strong loam, on a gravelly or otherwise porous subsoil, not on the one hand liable to be parched up with drought in dry times, nor swamped with stagnant water in wet ones. These I conceive to be the sort of conditions which should regulate our practice in the formation of artificial borders for Pears. In advancing this, I do not mean to assert that it will suffice to dig out a deep hole, fill up the bottom with a good layer of gravel, and then heap in a good depth of soil; but taking thorough drainage as the first great essential, to take every possible means to secure it in accordance with the principles and practice so often detailed in these pages; and then so to make use of and mix all available material at hand, as that when the border is finished it may approximate in some degree to the above natural conditions.

I have generally considered a depth of from 2 ft. to 3 ft. quite enough for all stone fruits, but with Pears it is different, and a depth of from 3 ft. to 4 ft. upon the drainage will best meet their requirements, because it must be observed that borders for Pears are generally constructed for a permanency, and, provided the constituents are such as to secure an open and porous condition, such a depth will be found more serviceable in the long-run—always provided that the drainage is perfect, with a good outlet, otherwise all the conditions for which we are striving will be rendered useless.

The principal object sought for in the culture of Pears on walls, is to increase the size and beauty of the fruit, and at the same time to retain, as far as it is possible to do so, the exquisite flavour which characterises so many of our best sorts. As I believe this to be mainly influenced by the condition of the medium in which the roots are placed, I may well be forgiven for exhorting that earnest attention should be given to this matter. Now, if we

W. H. Fitch, del.

Chromo. P. Stroobant, Chent.

Pear Des Deux Sœurs

look at the conditions under which the finest-flavoured fruit is obtained in naturally favoured situations, we shall find that is generally produced by trees growing in a deep staple on a dry bottom, whereby a greater degree of warmth than is found in more retentive soils is ensured. Bearing this in mind, in forming a compost for the staple of the border of such materials as are most at command, say, of loam, road-scrapings, and rotten manure, we must so break it up and disintegrate it, by intermixing substances of a more permanent character, such as broken bones, lumps of charcoal, old mortar, and broken bricks, that it may permanently retain a porous and elastic character such as may ensure warmth to the roots. This will be more obviously necessary, on account of the greater depth of the pear borders, as otherwise, in the course of time, there would be the risk of the soil becoming so much consolidated as to prevent the free passage of water, thereby causing the retention of too much moisture, which would entirely militate against the acquisition of a fine flavour.—John Cox, *Redleaf.*

PEAR DES DEUX SŒURS.

[Plate 546.]

When fruited at Chiswick in the autumn of 1880, this Belgian Pear was found to be both distinct and good. We have to thank Mr. Barron for the sample here represented by Mr. Fitch, whose figure gives a very correct idea of its general character and appearance. The fruit is rather above medium size, and so greatly resembles in appearance and texture of flesh certain forms of Marie Louise, that it may easily be mistaken for that variety. It is of an elongate-obovate form, with a short, stout, obliquely-set stalk, and a small open or semi-closed eye. The skin is thin, golden-yellow, spotted with small greyish dots. The flesh is white, fine, and half-melting, with abundant slightly perfumed sugary juice. The variety is very free-fruiting on the Quince stock. It is in use towards the end of October, and in November.

According to M. Leroy, Major Esperen has been sometimes, but incorrectly, regarded as the raiser of this Pear. He was, however, the first to report on it, at the request of the proprietors of the garden in which it appeared, the Mdlles. Knoop, of Malines, whence the name of "the Two Sisters' Pear;" very singularly also, the fruits almost invariably grow in pairs. Its age is imperfectly known, but as Esperen died in 1847, it should count but little over thirty years. M. Decaisne does not consider this variety admissible among choice Pears, for though he constantly found it with very fine flesh, and juicy, it was almost without aroma, and M. Leroy was of the same opinion. At Chiswick it proved to be of very good quality, perhaps owing to its being better suited than some sorts to our cooler climate.—T. Moore.

ELEMENTS OF ORCHID-CULTURE.

Chapter II.—Temperature and System of Management.

Two great questions, pregnant with good or evil to the Orchid plant, are the temperature, and the system or routine of management to which it is subjected. No matter how well the cultivator may cater in respect to the material under which roots prosper and extend: if the temperature be wrong, all will be wrong together. This is the principal rock upon which growers, young and old, founder. It is surprising that it should be so, for a dry atmosphere—to a well-trained nose, at any rate—portends what is likely to happen. Of course, in a state of nature, certain Orchids bask in the occasional glare of a tropical sun, and although the plants look, as they must do, desiccated and yellow, the rainy season works upon them nothing less than a magical reformation. Now, to attempt this sort of thing in our artificial climate is sheer folly, ending invariably in defeat. In the first place, we dare not, although it were possible, imitate with impunity those extremely sunny, arid conditions; and in the second place, we simply cannot imitate, even at a distance, those sudden out-bursts of stimulating power which are infused into the epiphytal plant on the return of rains and dews. The heat of the earth and surrounding vegetation combine to give this moisture a potent influence on plant-life which, under the very best system of artificial culture, cannot be commanded. Hence the folly of imitating Nature too

exactly. In fact, it may be taken as an axiom, the hotter the climate, the worse it is to manage. We have ample proof of this in every collection of Orchid plants. But in order to make our assertion good, let us condescend to a few details.

What are known as cool Orchids are invariably more or less well managed, and the main reason is that these, in a state of nature, come from mountainous regions at an altitude varying between 4,000 ft. and 6,000 ft. above sea-level. The heat, consequently, is more uniform and never so great, and the moisture is more or less continuous—it is easier, in fact, to imitate the climate; and there are no extremes, at least no violent extremes, compelling the culturist to forge along out of the common in his cultural system. But whenever you step down two or three or more thousand feet, then there is corresponding additional heat, with all the variations of drought and moisture which prevail in such a climate; and there is less wonder at a European culturist feeling that there are difficulties ahead which many have tried to encounter but have been baffled, and which many more in course of time will try, and not be, very likely, much more successful. Take those West Indian plants *Epidendrum bicornutum*, *Cattleya superba*, and the beautiful *Epidendrum dichromum:* how often they have been introduced by their hundreds and thousands, and yet in time have all disappeared! The same with the charming gem *Ionopsis paniculata* and *Oncidium pulchellum*. Now to try an arid climate for a month with these plants, supposing them to be already established, might do in a certain way, if it were not for the myriads of thrips and red-spider that would fasten on them, and suck out their life-blood, and some means of keeping these marauders under must be adopted, even at the expense of what might otherwise be good for the species. This cannot be done efficiently with tobacco-paper, but it may be done with tobacco-paper and copious atmospheric moisture—the one, of course, as much as possible without the other. You are, therefore, while stimulating growth, possibly enervating the plants' system, which will bring in its train evils, and perhaps eventually death; but far better, I say, have a decent, clean-looking plant, supposing it be pining away, than a plant infested with vermin, going from bad to worse. This, of course, is an extreme case, but it, nevertheless, represents what has occurred over and over again. Fortunately, the great majority of Orchids, even from hot climates, submit themselves to artificial cultivation with very good grace, and in some cases the cultivated plant seems to surpass the same species in a state of nature, but not without a sensible appreciation of what is really needed, in order to develop the plant with what might be called constitutional safety.

Well, then, as to system, there is a probability of a culturist being successful with a collection of the most beautiful Orchids in two different houses or climates, but he will be all the more successful if he can divide them into three sets. With three distinct climates as to heat, ventilation, and moisture, there need not be much difficulty in managing a lot of Orchids. The first, or the cool house, should be moist, airy, and pretty evenly balanced as to temperature throughout the year. The second, or the intermediate house, should also be moist, a little closer in the matter of ventilation, in winter particularly, with a summer temperature higher than the cool-house, and not varying quite so much from the cool one in temperature in winter. The third, or tropical house, should be moist, very moist under great heat, with copious ventilation when summer heat prevails, only it must be shut up early, and should never have an atmosphere offensively dry, and never be allowed to get too cold at any season.

With such diverse climates, and the proper apportioning of the plants in them, and a keen eye to keep down filth of all kinds, insects in particular, there is no difficulty in the culture of the great body of Orchids which the people admire. One thing cannot be too prominently pressed forward, and that is atmospheric moisture. The want of this is the loss of thousands of plants. I often think there is a bit of heedlessness about some growers in this matter. I do not say that neglect for a day or two will do harm, but a fortnight's neglect will bring about a state of things which it may take a year to eradicate, and the plants' health will be irreparably injured. There is no doubt that you may overdo a house with moisture, in winter particularly, but it is scarcely possible to do it in summer. Beware, however, and do not bathe the plants overhead, nor keep them in a continuously wet state over leaves and pseudobulbs. When I say the grower can scarcely overdo the moisture-supply, I mean, of course, the atmospheric moisture: the moisture the man in charge distributes over the tables and paths, &c., for the plants to take up, according to their need.

Some judgment must be exercised in watering at the roots, and the man that waters, if he does not know, must be instructed as to what kind of material the roots are embedded in, and if much moisture be needed. It will take, for instance, four times the quantity of water to give an adequate root-supply to a *Masdevallia* that it will do to a *Cattleya*, unless the *Cattleya* is actually suspended on a block in a high airy house. The *Masdevallia*, in fact, will take nearly as much moisture, even at the root, as you can give it during summer, if it be under-potted, only there is a danger that if the moisture lies about the young leads which are coming up, some of them may probably damp off. Mark this, they abhor anything in the shape of drought, particularly in the atmosphere, at any period of the year. Let the young grower observe particularly that, with very few exceptions—which in the course of these papers I hope to dwell upon—one of the golden rules of Orchid-culture is the creation and keeping up of a *moist atmospheric* medium, corresponding in some degree to the heat of the climate. With that he will find mere watering at the root, especially of plants in pots, not so absolutely essential, that is, there will not be the same need for so much of it.—James Anderson, *Meadow Bank, Uddingstone.*

OUR FRUIT CROPS:
THEIR PRESENT AND FUTURE.

THE uncongenial character of the summers and winters we have recently passed through has not only lessened the supply of fruit for the present, but many of the orchards, those of Worcestershire at least, show unmistakable signs of permanent injury. The Apple-trees in numerous instances present a seared and enfeebled aspect, and are so much crippled that there is little hope of many of them recovering, even with the advantages of the present favourable season. The Apple and the Pear crop in this locality are much under the average, and are particularly partial, for whilst in some sheltered situations fair crops are to be seen, in other orchards there is scarcely a fruit.

Altogether, the growing of Fruit must of late years have proved anything but a safe and remunerative speculation. The variableness of our climate and the uncertainty of securing even an average crop, should incite us to make every possible effort to secure the best results. It will be well, therefore, to bear in mind that, with so much foreign competition, fruit-culture can only be conducted profitably by the aid of skilful cultivation, and by growing such sorts as have merit, and are known to be suited for the locality, which have, moreover, the qualities of abundant bearing and good flavour, and, beyond this, are suitable for kitchen use. Worthless sorts are quite as much trouble to produce as the best, and are valueless when grown; and by far too many of our orchards are encumbered by trashy sorts, that barely pay for picking.

The land in Worcestershire is, upon the whole, highly favourable to the growth of the Apple and Pear, and fair results are realised with ordinary culture, or, so to speak, with no culture at all. At the same time, by judicious management, and by choosing favourable situations, very superior results can be attained. A situation sloping towards the south is to be preferred as that likely to secure the finest-flavoured fruits; and if sheltered naturally from the north, north-east, and north-west, so much the better. Shelter is of the greatest importance, but is too often lost sight of in the choice of orchard-sites. Shelter should always be provided, if not naturally present, but at such a distance as not to obscure the sunlight.

The Apple thrives best in a deep, substantial loam, which is not too dry, yet sufficiently drained to remove subsoil water, superfluous moisture being detrimental to the roots. The ground must in every instance be thoroughly well trenched, previous to planting the trees. High planting should be avoided, for even upon wet soils it is objectionable; and it is much safer to depend upon deep draining than to plant upon raised mounds, which look unsightly, and in which the roots are apt to suffer during severe droughts. As to the question of pruning or non-pruning, which is now being so much discussed, it is certain that injudicious pruning is worse than none at all, as it has led to much disappointment and many failures. Hence it is better to renounce all the fancy systems of torturing trees into particular forms, which have no better results than to sacrifice profit to shape. Guide and regulate the shoots so that they may attain uniformity of development. This is the only rational system of pruning, and that by which trees are benefited.

One other objectionable method of management often observable, more particularly on farms, is the grassing down of the surface im-

mediately small trees are planted. So treated, they make slow progress, and seldom attain such strength as those which occupy ground that is regularly cultivated. It is well to remember that vigorous, well-grounded foundations are the sure precursors of healthy, mature development, and that trees which are cared for in youth give the best results. By adopting an improved method of cultivation, we take the sure means by which to attain profitable results, provided we cultivate in each locality such kinds of fruit as are adapted to it.—GEORGE WESTLAND, *Witley Court, Stourport.*

SUBURBAN GARDENING.

SEPTEMBER.—The hot, drying weather has given place to a time of cool showers, and there is some danger these will be too prolonged to make it a happy time for either gardener or agriculturist. Many trees that had paused in their growth are putting forth tender shoots, as if a second spring had dawned upon them; and *Potatos* are growing out fast. We now require fine, hot, drying weather; let us trust that it may come ere long.

Kitchen Garden.—Great attention will now be required to keep weeds down, as the drenching rains are causing them to grow plentifully. When the weather is drying, the hoe should be well used among all advancing crops—a rule that acts both ways, by contributing to the welfare of the crops, besides keeping the garden neat and clean. All vacant ground should be dug, now that rain has come, to be ready for planting when required. Plantations of *Broccoli* and *Winter Greens* will be greatly benefited by having the soil drawn up about the stems; also *Broccoli* and *Cauliflowers* for autumn and winter use will require looking after, as at this period of the year caterpillars will infest the crops, and do them much damage. If space permits, *Endive* should be planted out, and presently the earliest be tied up to blanch for use. On a warm, sunny border, *Endive*, *Bath Cos* and *Hardy Cabbage Lettuce* may be planted out, to come in useful in early spring. *Lettuces* should be planted out for autumn use, and another sowing of *Turnip Radishes* be made. *Cauliflowers* from seed sown last month should be planted out. *Celery* should be earthed up when it is quite dry, giving a good soaking of water or liquid manure, which is preferable, previously, when the weather is dry. *Onions* should be pulled and stored, and the vacant ground, if trenched and well manured, should be used for *Spring Cabbage.*

Fruit Garden.—Fruit-trees on walls will require attention in regard to stopping late growths, and keeping the fruiting wood for next year well laid in. Too much care cannot well be taken to have this wood fully ripened by the autumn. From this time until March all *Stone-fruit Trees* and *Pear Trees* infested with scale cannot be too often syringed with soapsuds, let the weather be what it will, either wet or dry, warm or cold. When the fruit is gathered from *Peaches* and *Nectarines*, the tree should be well syringed, and if the leaves are infested with red-spider, a good dusting with sulphur should be given. New plantations of *Strawberries* should not be allowed to want for water in dry weather; a check from this cause now will be very injurious to the promise of fruit for another season. The hoe should be used among the plants, and all runners removed. In the case of established beds, all superfluous runners should be removed, and the decaying foliage cut away, but not the whole of the leaves. A top dressing of manure should be applied, and slightly forked into the soil.

Flower Garden.—In order to keep the garden as neat as possible, the flower-beds and borders should be gone over occasionally, to remove weeds, dead leaves, and decaying flowers. The grass will grow rapidly after the rain, and the sward should be frequently mown and kept well rolled. The most effective flower-beds will lose in attractiveness, if the surroundings be untidy. Cuttings should now be taken of any plants of which it is desirable to have a stock, and, if placed in pots of light sandy soil, will strike in a cold frame or under hand-lights. *Carnations* and *Picotees* should be layered without delay, if not already done; and pipings of *Cloves*, if put into a bed of sandy soil, will root quickly. A few things should now be sown for the spring garden, such as *Forget-me-Not*, *Silene*, *Pansies* and *Violas*, *Limnanthes*, &c., and any hardy plants useful for the purpose should be divided without delay, and planted out in store beds. *Canterbury Bells*, *Stocks*, *Sweet Williams*, *Columbines*, and other perennials need to be pricked off into store beds also, to grow into size for planting out later on.

Greenhouse.—This is the best time of the year for thoroughly cleansing the Greenhouse, so as to have it fit for the winter; and the work can be performed with the less danger, as the plants can be placed in the open air without fear of harm. The plants that are now in bloom, *Pelargoniums*, *Begonias*, *Fuchsias*, and others, should be kept well looked over and tidy, and on no account suffered to want for water. The *tuberous-rooted Begonias* make capital plants for decorating the amateur's Greenhouse, because so full of bloom, but the seed-pods should be picked off as they form. The *Coleus* is a good plant for the amateur, as it does well during summer

in an ordinary greenhouse, and the coloured leaves are both bright and effective. Those who grow the *Show* and *Fancy Pelargoniums*, and cut their plants back at the end of August, will find they have broken into growth, and should at once pot them, shaking out the old soil, trimming the roots so as to reduce their length, and placing them in the smallest pots possible. A good turfy loam, some leaf-soil, rotten manure, and sand, make a good potting compost; and the plants, when shifted, should be put into a cold frame and kept close for a few days, and shaded from the sun. Some of the most forward of the seedling *Cinerarias* should be potted off into small pots, and seedling *Calceolarias* pricked off into stove pans. We have found some *Cannas* very useful subjects in an ordinary greenhouse, and they have bloomed nicely.

Cold Frames.—The plants in cold frames will be greatly benefited by mild showers being allowed to fall upon them; but they should be protected from heavy, splashing rains. At this season of the year something requires potting weekly, and the sooner the work is got through the better, as the plants will all the sooner get established. Decaying leaves should be removed, and the surface soil kept stirred. *Hardy Primulas* should now be divided, and indeed, anything of this character should be attended to without delay. The bottom of the frame should be made as impervious as possible to worms, which, at this season of the year, find their way into the pots, and constantly throw up worm-casts. The vigilance of the gardener will find abundant scope at this season of the year.—SUBURBANUS.

GARDEN GOSSIP.

THE subject of the LONG-SHOOT METHOD OF VINE-PRUNING, as adopted by Mr. Hunter in the vineries at Lambton, has recently been discussed by a correspondent of the *Gardeners' Chronicle*, who states that the plan consists in reducing the spurs on each rod to a third or a fourth of the number usually retained, and letting the shoots run without stopping, in many cases almost across the house, this extension being necessary with the limited number of shoots, in order to secure enough foliage to keep up the full action of the roots. The principal Vines have been grown upon this system for three seasons, the object being to restore their strength, which had been much impaired through attacks of mildew, and no doubt also by the great weight of fruit which had been borne in previous years. The effect of this long-shoot treatment was unmistakably apparent last summer, in the vigour of the Vines and in the larger bunches with large berries produced. Last autumn many of these long shoots were of a thickness such as is usually only seen in the canes of strong young Vines, or the young rods brought up from headed-down old ones. This season they are still thicker and stronger, showing even bigger bunches. The thorough ripening of last summer's wood is proved by the number of bunches that each shoot shows, and the big shoulders, which in many cases are nearly as large as the bunches themselves. Muscats, Hamburghs, Black Alicante, Gros Guillaume, Trebbiano, and other kinds are alike promising. With a view to illustrate what it is possible to accomplish with the Vine, Mr. Hunter fruits a number in pots, consisting of strong shoots taken off at pruning-time, put singly in 7-in. pots, and induced to make roots before the buds start. The shoots are in about 6-ft. lengths, and are potted at the end of January, the pots being plunged in warm manure in an open shed, so that the tops are kept quite cool and dormant, whilst the bottoms are induced to form roots. It is upon this that success depends. By the early part of April, having pushed roots to the sides of the pots, they had just been removed to a newly-started vinery, where a little warm plunging material was provided for them, and the buds were commencing to swell. They are then moved into 12-in. pots, and will bear six or seven bunches each, averaging about 1 lb. weight. The cutting-like shoots used are very strong, from half to three-fourths of an inch in diameter. Some consist of portions of the tops of young Vines, and others are pieces of the long side-shoots produced by the old Vines. The kinds so managed are Muscat of Alexandria and Black Hamburgh.

— ON the question of the RENOVATION OF OLD VINES, the same authority remarks, that when reduced to a weak condition through a long course of exhaustion, through forcing and hard cropping, there is no fruit-bearing plant so capable of being brought round by good treatment as the Vine, especially if, in their earlier existence, the plants have been strong and vigorous. Instances in plenty are to be met with where old Vines, at one time strong, have been so reduced by hard work and insufficient nutriment, that they have been looked upon as useless, yet when subjected to judicious management they have so fully regained their vigour as to leave no trace of feebleness behind. Of what it is possible to accomplish in this way, in a comparatively short time, we know of no better example than is to be seen in one of the vineries at Upleatham. The Vines are over thirty years old, and from their general appearance show that they had thriven well in their early years; but when Mr. Letts took them in hand, the weak shoots and puny bunches showed their exhausted condition. The roots are all outside. They were taken up, and a new border made, which they at once took to kindly, as was evident by the immediate increase in strength of wood and size of fruit. The sorts are Black Hamburgh, Buckland Sweetwater, and Foster's Seedling. Last year they bore a crop, ripe the beginning of June, as heavy as it is desirable to take from permanent Vines, many of the bunches weighing from 2½ lb. to 3 lb., and being perfectly finished in every way, but especially in the intense black colour of the Hamburghs. These Vines produced the Grapes with which Mr. Letts took the first prize for three varieties of Grapes at Newcastle. This year, the strength of the shoots and leaves is more like that of Vines some four or five years planted, and many of the bunches from the long old spurs look as if they would run up to 4 lb. each. Young rods are now being brought up, and the old ones will be removed altogether. These Vines give substantial evidence in support of the views of those who in many cases prefer recuperative treatment to old Vines, that have been weakened through one or other of the causes that bring about an enfeebled condition, rather than to clear them out and replanting. It may also be mentioned that the roots are wholly in an outside border, and the border has nothing more than a few inches of leaves to keep it

from being frozen, without anything whatever to throw off the rains and melting snow.

— IN reference to the introduction of the PHYLLOXERA, Mr. C. V. Riley, the American State entomologist, writes in the *American Naturalist*:—"I strongly believe that the insect was originally introduced into Europe from America in the 'winter-egg' state upon cuttings. I would say, therefore, to those countries desirous of defending themselves from this scourge, that all danger is removed when Vines and all parts of Vines from infested countries are kept out. With such prohibition, all requirements are met, and all legislation that goes beyond this must necessarily be hurtful to general industry; while the prohibition of traffic in American Vines in countries where the Grape Phylloxera is known to already occur can have no useful end, and may be detrimental. That the rarity with which the impregnated egg is found above ground greatly reduces the chances of Phylloxera introduction by cuttings is true, but in a country desiring protection from such a scourge the remotest chance should not be risked. Mr. Bush is wrong in supposing that this egg may not occur on one-year canes. I have found it upon such, and it may even occur upon the dried leaf where, in all probability, it is destined to perish. While, therefore, I believe that the laws cannot be too stringent in preventing the introduction and use of Grape Vines in any living condition into a non-infected from an infected country, it is equally true that there is no danger in the mere passage through such a country of such Vines or cuttings. These are necessarily boxed, and can only be safely and properly shipped during the cold or non-growing season, when the egg is dormant, so that there is a practical impossibility of the introduction of the insect by the mere passage whether of Vines or cuttings."

— WRITING of WALLFLOWERS in the *Gardeners' Chronicle*, especially in reference to the high death-rate amongst them during the past winter and spring, Mr. Horsefield, of Heytesbury, states his belief that nine-tenths of them may be traced to two causes:—1, Sowing the seed too early; 2, growing the plants afterwards in too rich a soil. To give force to this statement, he adds that he annually plants out in beds and borders from 3,000 to 4,000, and on looking over his stock this spring, did not find more than a dozen dead ones. His *modus operandi* consists of sowing the seed about the middle of May, and in pricking out the young plants, when large enough, in rows 9 in. apart each way, in the poorest soil obtainable, in which they remain till the end of October, when they are transplanted to the places where they are required to flower.

— THE Annual Exhibition of the NATIONAL CARNATION AND PICOTEE SOCIETY (Northern Division) took place on August 24th, in connection with the great International Exhibition, in the Botanical Gardens, Old Trafford, Manchester. We intend to publish a report of the show in our next issue.

— THE pretty DAPHNE FIONIANA, which bears a profusion of charming rosy flowers, deliciously perfumed, is one of the best hardy Daphnes in cultivation. The flowers are closely clustered at the ends of the branches, and their perfume is most agreeable and powerful. The plant was formerly known under the name of *D. versaillense*, having been the result of a cross between D. Cneorum and D. collina effected by M. Fion, whose name it now bears. It is usually, says the *Journal of Horticulture*, grafted on one of the common species, such as D. Mezereum or D. pontica, and dwarf, compact plants are readily obtained, which flower freely during the early spring months.

— THE following plan of growing TOMATOS FOR THE MILLION, as followed by Mr. Hepper, at Mr. Hawkins' Nursery, Haver Green, Ealing, has recently been mentioned in the *Gardeners' Chronicle*. In a span-roofed house 216 feet in length there are growing 400 plants, 200 on each side, planted in a bed of soil resting on somewhat narrow wooden and slate shelves. The house is warmed solely by solar heat. The plants, which represent a good type of the Large Red Tomato, were raised from seed in March, and planted out at the latter part of April. Layers of turf were first laid on the shelves, and on this was placed a compost formed of good fibry loam and dung, in which the Tomatos were planted. They are trained straight up to the roof, and the laterals are kept thinned out. As soon as the fruits begin to show signs of colouring, they are picked off and ripened on shelves. One remarkable feature of the plants is their short-jointed growth. Mr. Hepper calculates there are eight joints to the yard, and that the plants, after thinning, average eighteen fruit to the foot-run—such fruit, too, large, symmetrical, and highly coloured. The shelves are narrow, and the depth of soil scarcely exceeds 6 in.; as the roots find their way to the surface, a little fresh soil is added, and copious waterings are given. The bunches are thinned out to about nine fruits by removing all the malformed ones. With constant attention and careful cropping, Mr. Hepper hopes to gather fruit up to Christmas. There are also four smaller span-roofed houses planted in beds for later crops, the plants being similarly trained. These houses give another 500 plants, and it is believed each plant will produce on an average fifty fruits. With such productiveness, good Tomatos should be within easy reach of the million.

— THE culture of COOL ORCHIDS is hardly yet understood generally. It is now a good many years since the first experiments were made at the York nurseries of submitting some few kinds of Orchids out-of-doors fully exposed to the open air in the summer. Many people have supposed that this kind of treatment was simply an experiment, tried to see what some of the hardier kinds would bear without destruction; but if they were to see the rows of *Lælia majalis* and *Epidendrum erubescens* stood out to make their growth as soon as the danger from frosty nights is past, until there is a chance of the same chill visitant in the autumn, they would be of a different opinion. The Lælias consist of immense specimens, with from 200 to 500 bulbs each, growing on blocks of wood; they are hung in a double row to a couple of rails about 1 foot or 15 inches high, fastened to posts driven into the ground, in the full blazing sun, drenched with water in hot weather three or four times a day. Here they make their growth, and that growth much stronger than ever they will under glass. The stock of *Epidendrum erubescens* is in pots stood on the ground at the north end of one of the big houses.

— MESSRS. CARTER AND CO.'S new dwarf TROPÆOLUM EMPRESS OF INDIA ranks far ahead of anything of the kind which has previously been known. The plant is of dwarf compact habit,

like King of Tom Thumbs, with dark-tinted foliage, and flowers of a deep but brilliant crimson, many degrees deeper and richer than in the variety just named, from which it has probably originated. We know of nothing which comes so closely to it in colour as some of the brighter crimson forms of Phlox Drummondii, which are peculiarly rich and velvety in the intensity of their brilliant colouring. In richness and brilliancy of hue it was quite unapproachable, and the whole seed-plot, occupying a large stretch of ground, was quite true, so that it should be perfectly reliable from seed. The very few gaps in the rows, indicating the places whence inferior seedlings had been removed, may be regarded as a strong test of constancy, as the whole batch of plants were at the time we saw them in full bloom, and very attractive.

— A NEW book now before us is Mr. S. Wood's FORCING GARDEN, (Crosby Lockwood and Co.) It is a volume of handy size, and goes through the various departments of forcing—fruits, flowers, and vegetables; the text being illustrated by various figures of houses recommended for the different subjects treated on. There is a good deal of practical information to be picked out of the volume, and we have noticed less that is objectionable than in some of the author's previous writings. Hence it may be commended to the notice of amateurs who may wish to accelerate the growth of any particular crop, and young gardeners may read it with profit.

— SOME prizes of five, three, and two guineas were offered this year for proficiency in PACKING FRUIT FOR MARKET, by Messrs. Webber and Co., fruiterers, of Covent Garden, for the best packed boxes of fruit, viz., one of not less than 14 lb. of grapes, another twenty-four peaches, and a third of not less than 2 lb. of strawberries, to be sent per rail, and duly delivered to the Royal Horticultural Society. The 1st prize was won by Mr. Crump, of Blenheim. His box of black Hamburgh grapes was secured with a thick lining of moss, wadding, and paper, but without any division between the bunches, and came out well; his peaches were firm, but had about them rather too much wadding; and his strawberries, packed in leaves, were first-rate. Mr. A. Waterman, of Preston Hall, Aylesford, was 2nd, with good fruits, the grapes having interlacings of paper that are objectionable. Mr. Austin was third, but his grapes, though of good colour, were somewhat rubbed. Mr. J. Watson, of Colston Bassett, a fourth exhibitor, sent peaches, packed in bran, which had become displaced. This material is deprecated, as not being so good as soft, clean moss. Mr. Webber advises, for peaches, each fruit to be wrapped in soft paper, and packed carefully into dry, well-picked moss, as the very best method, the use of much wadding being avoided.

— MR. DOUGLAS has very properly called attention to the neglect of the RANUNCULUS as a garden flower, the neat and symmetrically-formed double flowers nodding in the breeze affording a feature of unusual beauty. The old florists used to be very particular about these flowers, but the fact is, that ordinary well-worked soil, light or medium, suits them admirably; indeed, it matters little what the soil is, if the fine sandy peat left over after repotting Orchids is used to plant the tubers in, for they grow freely, and flower well, in this sandy peat. Some of the fine double varieties of fifty years ago have been handed down to us, and we admire them all the more because of the thoughts they suggest to us of the gardens of the florists so long ago. Why should not the Persian Ranunculus be still further improved? The Rev. Joseph Tyso tells us, through the pages of the *Horticultural Register*, how to manipulate the flowers in order to obtain seeds. He says:—"Obtain some of the best show flowers in each class which produce seed-vessels, either dark, white, scarlet, crimson, yellow, striped, &c., and a number of the best semi-double of each corresponding class producing anthers as well as pericarps. Thus, if a new flower is desired, fertilise any good dark flower with the pollen of a semi-double of the same colour." The best named Scotch varieties can be obtained from any seedsman at 10s. a hundred, and the stronger-growing French form at the same price. Those who wish to save seeds could do so by using the pollen from the French varieties on the more double old-fashioned strain. The seeds may be sown in the autumn, and the plants very soon produce flowers.

— A PORTRAIT of Mr. G. W. Johnson was given in a recent issue of the *Journal of Horticulture*, as a frontispiece to the second volume of the third series of that publication, which was commenced by Mr. Johnson, under the title of the *Cottage Gardener*, over thirty years ago. The portrait is accompanied by a pleasing narrative of his active and energetic life, and all who have known him will cordially unite in the aspiration of the narrator that he may long continue to participate in the pleasure which a retired life, in the midst of a garden of pleasures, can afford.

— THE elegant CHAMÆDOREA GLAUCIFOLIA is grown by Mr. Hudson, of Gunnersbury House, in 8-in. pots, in which way they take up little room, and are easily moved for decorative purposes. In these they grow up with a slender shaft 10 ft. or 12 ft. high, capped with a crown of graceful foliage; the wonder at first is where they can get the food sufficient to maintain such an amount of vegetation. The answer is, Standen's manure.

— THE REPORT OF THE FRUIT CROPS, as recently published in the *Gardeners' Chronicle*, is, on the whole, more favourable than was anticipated, though not so uniformly so as that on the Potato crop. The weather of last autumn was conducive to the ripening of the wood. Taking the several fruits in order, it appears that *Apricots* are greatly under average, more especially in the Midland and Southern counties; *Plums* are about an average crop; *Cherries* have been extraordinarily plentiful, the Scottish, Midland, and Southern districts yielding the best crops; *Peaches* and *Nectarines*, though not grown out-of-doors in the North, yield a proportion of favourable reports for the whole kingdom, at least a third greater than those of an opposite character; *Apples*, the most important of our hardy fruits, are almost uniformly abundant—in Scotland, remarkably so; *Pears* have not yielded quite so well as Apples; *Small Fruits*, such as Currants, Raspberries, and Gooseberries, have been very abundant everywhere; *Strawberries*, on the whole, have been very productive; *Nuts*, which are usually fickle, show good crops. "Although, therefore," adds our contemporary, "we cannot look on this as a typically good fruit year, it is so vastly superior to the last two years, that we cannot fail to be thankful. It is the more a matter of satisfaction that Ireland shares with the rest of the kingdom not only in an unusually fine Potato crop, but also in a good supply of fruit."

— MR. G. PAUL has found the EARLIEST STRAWBERRY to be the French variety named PAULINE. With him it was ripe on June 10th, three or four days before the Black Prince. The fruit of Vicomtesso Héricart de Thury, growing beside it, had not attained more than half its size, It seems to be a free-bearing kind, of good size, with a less proportion of small fruit than most of the earliest sorts. The *Journal of Horticulture* refers to its distinct earliness, and to the good size and quality of its peculiar elongated fruit.

— THE ANNUAL MEETING OF THE PELARGONIUM SOCIETY was held, according to announcement, on August 3rd, in the gardens of the Royal Horticultural Society at Chiswick. The report of the Committee showed a steady advance in the prosperity of the Society, though the aid of generous friends is still needed in order to sustain, and if possible enlarge, its operations. Its chief effort has hitherto been made in the direction of exhibitions, which have been encouraged as the most ready means of acting on the sympathies of the public; and that of the present year was in every respect satisfactory. The amount paid in prizes, which were well contested, was £124; and eighteen First-class Certificates have during the season been awarded to novelties in the several groups of Pelargoniums now cultivated. The balance-sheet shows a sum of £41 19s. 1d. in the hands of the Treasurer, to be carried on to next year's account. The officers elected for the ensuing year were :—Chairman, Mr. T. Moore; Vice-Chairman, Mr. W. Paul; Hon. Treasurer, Mr. H. Little; Hon. Secretary, Mr. S. Hibberd. As is customary on these occasions, the members present with their friends partook of luncheon in the great vinery, and a pleasant, social hour closed the proceedings for 1880-81.

— IN reference to INSECTIVOROUS Plants—as it is the fashion to call those with fly-catching leaves and flowers—Mr. P. Henderson, writing in the *Scientific American*, observes :—"During the summer of 1878 exhaustive experiments made with the Carolina Fly-trap (*Dionœa muscipula*) showed that the so-called 'feeding' of the plants in no way conduced to their health and vigour, being identical in all respects with those that had not been given any insects. Why because the exudations from a plant are such as to cause an insect to adhere to it, or its mechanical formation should entrap the insect, we should jump to the conclusion that it should then feed on its prey, it is hard to imagine. On the Cruel plant (*Physianthus albens*) hundreds of moths, butterflies, and other insects may be seen any day in August when the plant is in bloom, dead and dying, firmly held by their antennæ. Professor Thurber thus describes the trap contrivance, by which the insect is caught :—'The anthers are so placed that their spreading cells form a series of notches in their ring around the pistil. The insect in putting its proboscis down for the honey must pass it into one of these notches, and in attempting to withdraw it the end is sure to get caught in a notch, boot-jack fashion as it were, and the more the insect pulls, the more its trunk is caught.' Thus caught, the insect starves to death, hence the well-deserved name of Cruel plant. Now, here is a trap nearly as wonderful as that of the Carolina Fly-trap, and far more so than that of the viscid exudations of the Silene; yet even Mr. Darwin would hardly say that the Cruel plant feeds on these insects, any more than that the gnats caught by millions by the resinous exudations of the Hemlock tend to augment growth, or that the thistle and burdock of the wayside owe any part of their health and vigour to the scores of butterflies, moths, or bumblebees that are in their headlong flight impaled on their spines."

— THE *Journal of Horticulture* gives the following receipt for preparing GUM-WATER for fixing the petals of Pelargoniums and other flowers :—Place 8 oz. of gum in 5½ pints of soft water, and allow it to remain about two days to dissolve; then strain it through a piece of muslin, and use it from small tins, such as ladies use to oil their sewing-machines with. The gumming process can be done very quickly with these, as one drop is quite sufficient for a flower.

— RECENTLY, Mr. W. Thomson had at Clovenfords a beautiful CATTLEYA, which was most *récherché* in the colouring of its flowers, the sepals and petals being white, suffused with rose-purple; the lip dark rosy-purple, the stalk purple also, and the sheath that contained the flower dark red. The variety appears to be unique, and Mr. Thomson, it is reported, has since sold the plant to Mr. Wilson, of Lanark, for £210!

In Memoriam.

— HEWETT COTTRELL WATSON, Esq., died at his residence at Thames Ditton on July 27th, at the age of 77. In him British botany has lost one of our most painstaking workers, and a prolific writer on the geographical distribution of British plants. His *New Botanist's Guide* (1835-37), and *Cybele Britannica*, 4 vols., with supplements (1847-59), are indispensable to all students of British plants; the *London Catalogue of British Plants*, of which eight editions have been issued, was mainly his work. His garden at Thames Ditton contained a fine living collection of rare and critical British plants.

— MR. GEORGE REID, senior partner of the firm of Benjamin Reid and Co., seedsmen and nurserymen, of Aberdeen, died on July 18th, after a long illness, at the age of 55. In 1845 he entered as a journeyman shopman the service of Messrs. Benjamin Reid and Co., becoming a partner in 1851; and in 1865, on the retirement of his uncle, Mr. Benjamin Reid, he assumed the responsibility of the business. Messrs. Reid's nursery was stocked with rare Coniferæ and other ornamental and timber trees, in the acclimatisation of which Mr. Reid took a keen and intelligent interest.

— MR. WILLIAM SHARPE, gardener to Sir John S. Richardson, Bart., at Pitfour Castle, Perthshire, died on July 29th, aged 77 years. He passed his early years in the gardens of Sir P. Murry, Ochtertyre, Crieff, and subsequently in the Experimental Gardens, Edinburgh. After spending some few years at Edmiston and Lexmount, he was called about the year 1834 to the service of Sir John S. Richardson, Bart., where he became a competitor at the Caledonian Horticultural shows, carrying off for three consecutive years the Society's Gold Medal for collections of fruits, flowers, and vegetables. Dahlias were at one time his study, and he raised several varieties of superior merit. In 1859 he entered the service of the late Earl of Eglinton, but shortly after the death of the earl returned to the service of his former employer, Sir John S. Richardson.

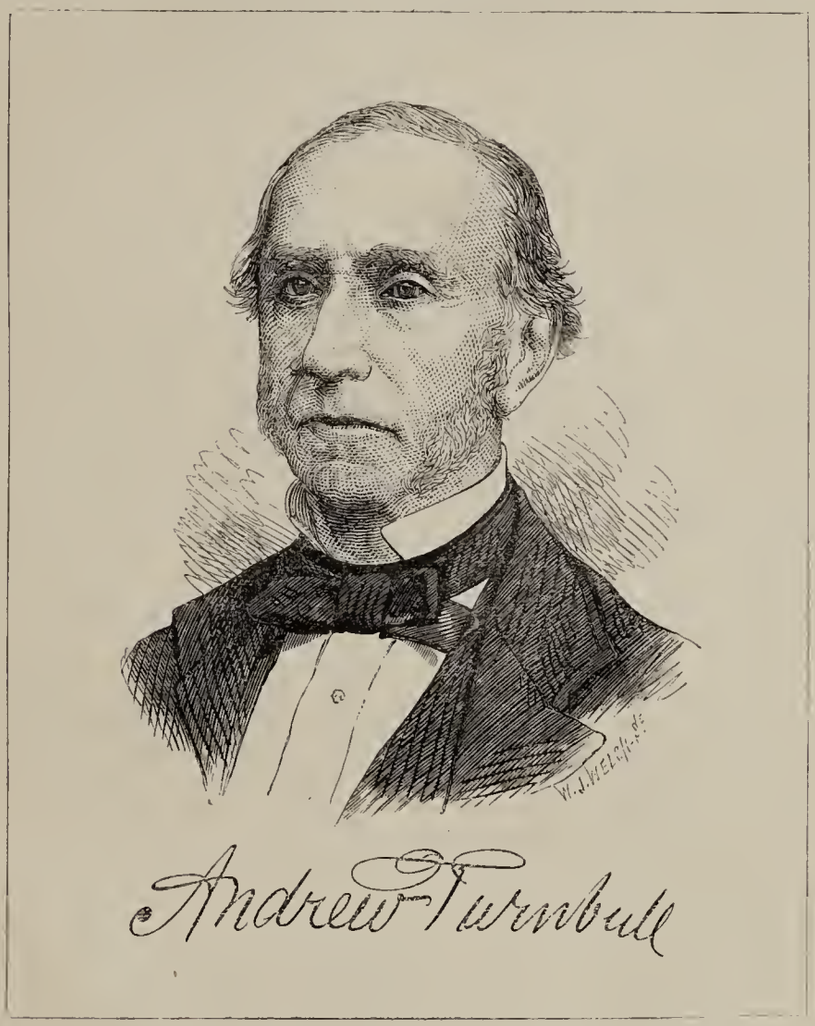
W H. Fitch del. Ericas: P De Pannemaeker Chromolith. (Gand

1, Lord Dunglas 2 Turnbullii superba 3 Dr. Masters 4 Savileana bothwelliana
5, Ferruginea bothwelliana 6, Shannoni bothwelliana .

NEW BOTHWELL HEATHS.

[PLATE 547.]

BY what strange fatality is it that the genus of Cape Heaths (*Erica*) has become a family of neglected plants? Once, they crowded our exhibition tents, and abounded in our greenhouses and conservatories; now, with the exception of a few free-growing market kinds, they are seen only as comparative rarities in either place. It cannot be from want of beauty that they are thus neglected, for few flowers are so chaste and lovely as are many of these; it cannot be from sameness of character, though they all have needle-shaped leaves, for the colours and forms and arrangement of their flowers are infinitely varied; it cannot be that they come at an unwelcome season, for they bloom, some or other of them, all the year round; it cannot be that their cultivation presents any obstacle to their popularity, for many, at least, of them are as easily grown as any other exotic plants, and if some few require extra skill and care, it is only such skill as every true gardener would be anxious to show that he possesses, such care as he would only too gladly bestow. It must be, we suppose, that they are out of fashion, that the wheel of fortune in its revolutions has passed them by, and that we must wait for another turn before they again attain popularity. Be it so. Their extreme loveliness must again bring them to the front; and we shall be delighted if our illustrations of the new Bothwell Seedlings, of which we have more in store, should have any influence in that direction.



The collection of Ericas, or Heaths, at Bothwell Castle has become historical; and so is the fame of the veteran, Mr. Turnbull, as a raiser of choice seedlings, and a successful cultivator. We are indebted to that gentleman—whose portrait, borrowed from the *Gardeners' Chronicle*, we here introduce—for numerous specimens sent to us during the past flowering season, from which Mr. Fitch has made several sketches, some of which are reproduced in the accompanying plate, and may be described as follows:—

Fig. 1. LORD DUNGLAS.—This is a very

fine variety of the *aristata* type. It has short, recurved leaves, prettily ciliated at the edge, awn-tipped, and growing in whorls of four. The flowers are developed in the axils of the upper leaves and form a terminal cluster, the pedicels having bracts approximate to the calyx; they have a ventricosely tubular corolla over an inch long, and of a bright glossy crimson, contracted at the mouth, where there is a ring of black, and terminating in a broad spreading limb of four rounded white segments, showing a cross of dull crimson in the throat. The flowers grow in clusters of six or eight together, and the variety is altogether one of very great beauty and merit.

Fig. 2. TURNBULLII SUPERBA.—This has a more slender appearance than the last, from the leaves being erect; they grow three or four in a whorl, and are awned and marginate, with the margin gland-fringed. The flowers grow six or eight together in a kind of umbel, the pedicels having bracts remote from the calyx; they are an inch long, with a rosy-red ventricose tube, a black contracted mouth, and a spreading limb of four rounded white segments, showing a deep red throat. A distinct and handsome variety.

Fig. 3. DR. MASTERS.—This is a remarkably showy hybrid of the *Shannoni* type, raised from *Erica Shannoni*, crossed by *E. retorta*. It has large, spreading, sparse, marginate, ciliated awned leaves, growing four in a whorl, and bold terminal massive umbels of flowers, having the ciliated bracts of the pedicels remote from the calyx; the corolla is flask-shaped, very much contracted at the neck, which has a crimson band or ring, the ovate spreading limb segments being white, and somewhat reflexed, the throat crimson, and the tube white. It is a very fine addition to the light-coloured tubular-flowered Heaths.

Fig. 4. SAVILEANA BOTHWELLIANA.—This is a very greatly improved form of the old *Erica Savileana*, having much larger and more numerous flowers. The leaves are slender, linear, spreading, ciliated, with longish hairs, and with a tuft of similar hairs at the apex, and grow four in a whorl. The flowers are pitcher-shaped, of a delicate rosy pink, three-eighths of an inch long, with a contracted throat, and small spreading four-lobed limb. The bracts of the hairy pedicels are remote from the calyx. It is a distinct and attractive Heath, flowering in large bouquets, and of a very pleasing soft rose-colour.

Fig. 5. FERRUGINEA BOTHWELLIANA. This is a seedling from *Erica ferruginea*, crossed by *E. Massoni*. It is a very handsome, compact-growing hybrid, having the branches densely clothed with spreading, ciliate leaves, the crowded position of the leaves, and the long, twisted hairs of the margin, giving the branches a cylindrical form and a woolly appearance, as in *E. Massoni*. The flowers form a dense, terminal tuft, and are about five-eighths of an inch long, tubular, and slightly ventricose, of a bright rosy tint of red, and with a viscid surface, the limb of four rounded lobes encircling the deep-red throat. It is a charming Heath, and a great advance upon the typical *E. ferruginea*.

Fig. 6. SHANNONI BOTHWELLIANA.—This is one of the finest tubular white Heaths in cultivation. It is the result of a cross between *Erica Shannoni* and *E. jasminiflora alba*, the former being the seed parent. The leaves grow in whorls of three, and are large, sparse, and half-spreading, gradually tapered to a point, and finely ciliated. The flowers grow in a large terminal cluster or umbel, and have hairy pedicels; the corollas are flask-shaped, pure white, with a green contracted neck, and large spreading limb of four ovate pure white lobes. A fine and well marked exhibition Heath.

The varied and beautiful varieties here figured, though they represent but a tithe of the variety and beauty to be found in the Heath family, afford quite sufficient evidence of the great value of these comparatively neglected plants, both for decorative and exhibition purposes.—T. MOORE.

ARCHDEACON LEA'S FRUIT-TREES.

TO-DAY (September 15th), I have been to see the last of Archdeacon Lea's Plums. The crop this year in every way supports what I have stated more than once regarding the culture which these productive trees receive from their worthy owner. They have all been restricted at their roots, but mulched and surface-dressed with care and a liberal hand. Inducing the roots to grow upwards is, I think, a fertile cause of success; the "leave alone" system or "unassisted" natural plan evidently has no chance with trees which have been skilfully handled, or why should these trees bear abundantly every year, and the fruit realise the best prices going,

while those all around only bear well about one season in three? The roots of the former are kept in a mass of fibre, and the branches prevented from becoming matted, sun and air having full access to every branch. The growth is thus kept firm, and bristling with fruit-buds. Apples and Pears are considered as to their requirements, and are generally loaded with excellent fruit. Pears are especially fine this season, and selections of free-bearing kinds are planted in quantity. Louise Bonne of Jersey, Beurré de Capiaumont, Marie Louise, and one or two others are grown in quantity, so that abundance of fruit are every season gathered from these trees.—M. Temple.

THE ORCHID ALBUM.

THIS new illustrated monthly work on choice Exotic Orchids has been projected by Mr. B. S. Williams, to meet, and also to help forward, the growing taste for this aristocratic race of plants, the importation of which is now carried on more extensively than ever, and the cultivators of which must be more numerous than at any previous period. Both the amateur and professional orchidist are constantly in need of illustrations of the plants they cultivate, as a means of determining their correct nomenclature; and Mr. Williams has in this publication, which is supplementary to Mr. Warner's larger work on the same subject, made an attempt to supply this want, which has so long been experienced. From the well-known beauty of the plants, moreover, a set of faithfully-executed representations of the choicer kinds, is at all times a welcome ornament of the drawing-room table.

The Album is of royal-quarto size, and four plates, drawn and coloured in the best style, are issued monthly. The text comprises descriptions of the plants figured, notes on their cultivation, and such general observations as are likely to prove interesting or useful to orchid-growers. Each annual volume is to form a handsome Album of pictures of the most beautiful Orchidaceous plants.

Three parts are already issued, containing the following illustrations:—1. *Oncidium concolor;* 2. *Lælia Schrœderii;* 3. *Cattleya Mendelii grandiflora;* 4. *Epidendrum vitellinum majus;* 5. *Masdevallia Shuttleworthii;* 6. *Cattleya Morganæ;* 7. *Promenæa citrina;* 8. *Cypripedium Stonei;* 9-10. *Lælia purpurata Williamsii;* 11. *Phalænopsis amabilis Dayana;* 12. *Oncidium Gardneri.*

Besides its value as a picture-book—a collection of well-drawn illustrations of popular Orchids, a pleasing ornament for the drawing-room table, and useful as a means of identifying the particular plants figured—the work will be an important aid to amateurs and inexperienced cultivators, as a guide to the successful management of their plants, the cultural directions therein given being the result of Mr. Williams' lengthened practical experience as a most successful grower of Orchids.—M.

VINES AND VINE CULTURE.

Chap. XVIII.—The Varieties of Grapes.

(Continued.)

THE descriptions of the varieties of Grapes included in our Synoptical Table are here continued, from page 131:—

Lady Downe's Seedling (86).—A round black Vinous Grape.

Vine.—Growth strong and robust, the wood ripening freely, the ripened shoots freequently very downy; very free-fruiting; late in commencing to grow. *Leaves* roundish, deeply toothed, downy, dying off reddish, or sometimes yellow, the leaf-stalks very downy, and with a tinge of red.

Fruit.—Bunches long, from 8 in. to 12 in., tapering, very irregularly shouldered, compact, generally setting freely. *Berries* large, roundish, or sometimes ovate, frequently with a distinct suture across the apex, showing the form of the seeds. *Skin* thick, tough, and leathery, deep-purplish black, with a thick bloom when properly coloured, but frequently reddish-purple, especially near to the stalk. *Flesh* dull, thick, and firm, with a somewhat harsh, sharp, acid flavour, excepting when well ripened, when it becomes brisk or sparkling, sweet and rich.

History, &c.—This truly excellent and most popular Grape was long in having its merits recognised. It was raised by Mr. Foster, gardener to Viscount Downe, Beningborough Hall, York, about the year 1835, and was first exhibited before the Horticultural Society in 1845. Eight years after this, viz., in 1853, it was sent out by the Messrs. Backhouse, of York, but it was still many years before its great merits were fully recognised, as, perhaps, the best-keeping of all late grapes. In 1858, a most interesting letter appeared in the *Gardeners' Chronicle* (p. 70), from Mr. Saul, giving the history of this grape, as received from Mr. Foster:—"Lady Downe's Seedling Grape was raised from the Black Morocco, crossed by the Sweetwater 23 years ago. The most singular thing was that from the same seeds there should have been two varieties—a black grape and a white [this was subsequently named Foster's Seedling]. The bunch of grapes these were raised from, Lady Downe had for her lunch, and after eating the grapes, she sent to the gardens for a pot of mould to sow the seed in. After the plants were up, and the seed-leaves expanded, they were handed

over to me, to take charge of them. I don't know whether I ought to claim the credit of raising it or not. The crossing of the varieties was my doing."

Cultural Notes.—This very valuable grape is easy of cultivation; it will ripen in any ordinary vinery, but requires a rather higher temperature to set the fruit thoroughly well. It forces well, but requires considerable time to develop its proper flavour. The berries at certain stages are very liable to scalding. It keeps well, probably better, than any other variety, and will hang fresh on the Vine until March.

Season.—Late.

Merits.—First-rate, specially recommended for late or spring use.

Lombardy (40).—A round red or grizzly Sweetwater Grape. *Synonyms:* Flame-coloured Tokay, Red Rhenish, Wantage.

Vine.—*Growth* strong and vigorous, but not very free-fruiting. *Leaves* large.

Fruit.—*Bunches* very large, from 12 in. to 20 in. in length, broadly shouldered, very regular in form, somewhat loosely but well set, very handsome. *Berries* medium-sized, roundish. *Skin* pale red or grizzly. *Flesh* pale, moderately firm, sweet, but not rich.

History, &c.—This grape is of Continental origin. It, however, was, singularly, originated in this country also, having been raised from the seed of a dried raisin, and grown on the end of a cottage at Wantage, whence it was received by Mr. Wilmot, of Isleworth, and exhibited before the Horticultural Society in 1821.

Cultural Notes.—Will succeed in any ordinary vinery.

Season.—Middle season, or rather late.

Merits.—Second-rate.

Long Noir d'Espagne.—A synonym of Trentham Black: which see.

Luglienga Bianca.—A synonym of Golden Hamburgh: which see.

Madeira Frontignan (72).—A round red or grizzly Muscat Grape. *Synonyms:* Muscat Rouge de Madère, Muscat Noir de Madère.

Vine.—Moderately free and vigorous in growth, shoots always ripening freely, very prolific or fruitful. *Leaves* small, roundish.

Fruit.—*Bunches* small or below medium, close and compact, closely and well set. *Berries* medium-sized, round. *Skin* reddish-purple or grizzly, thick. *Flesh* firm, yet juicy and very rich, having a very decided Muscat flavour.

History, &c.—Imported from France some years since, by Messrs. Rivers, and the Royal Horticultural Society. Fruited at Chiswick, but not often to be met with.

Cultural Notes.—Will succeed in any house suitable for Black Hamburgh, and ripens about the same time.

Season.—Early.

Merits.—Excellent in quality.

Madeleine Royale (17).—An oval white Sweetwater Grape.

Vine.—*Growth* strong and vigorous, very similar to Black Hamburgh. *Shoots* strong, ripening freely, very fruitful. *Leaves* similar to the Hamburgh.

Fruit.—*Bunches* medium-sized, rather short, but broadly and stoutly shouldered, well set. *Berries* medium-sized, ovate. *Skin* thin, almost transparent, whitish or pale green, somewhat liable to crack about the time of getting ripe. *Flesh* thin, pale, briskly sweet and pleasant, but not rich. It somewhat resembles in appearance Foster's Seedling, but ripens earlier, and is not quite so large as that variety. A very pretty grape.

History, &c.—Received by the Royal Horticultural Society from M. Leroy, Angers. Has been grown at Chiswick for many years in an unheated orchard-house.

Cultural Notes.—Succeeds well in any ordinary vinery, and will ripen in a cool greenhouse; but in very cold or damp weather, the skin being thin and tender, is liable to crack and decay.

Season.—Early, ripening in advance of the Black Hamburgh.

Merits.—Second quality, but worthy of culture as a free-fruiting, nice, early grape.

Madresfield Court (43).—An oval black Muscat Grape.

Vine.—Moderately strong in growth, very free; shoots always ripening freely, producing prominent, dark-brown buds, and generally covered with a thin coating of down. Very fruitful. *Leaves* medium-sized, rugose, deep green, sharply or deeply lobed; leafstalks and venations very rugose, reddish. The leaves die off dark crimson, and are very beautiful.

Fruit.—*Bunches* long, above medium size, very regularly tapering, but frequently with a broad-point; shoulders generally small, stalk stout; average weight, 1 lb. to 3 lb.; bunches always freely and well set. *Berries* large, sometimes very large, on stout stalks, long ovate in shape, and very regular. *Skin* tough and membraneous, of a dark-purplish shade generally, seldom quite black, and covered with a very dense blue bloom, like some varieties of Plums. *Flesh* thick, greenish, very tender, sweet, rich generally, but not always, with a very distinct Muscat flavour. Extremely handsome.

History, &c.—A true hybrid, raised by Mr. Cox, gardener to Earl Beauchamp, at Madresfield Court, Worcestershire, by crossing Muscat of Alexandria with the Black Morocco. It was awarded a certificate by the Royal Horticultural Society in 1868, and was subsequently sent out by Messrs. Lee, Hammersmith.

Cultural Notes.—Remarkably easy of cultivation, possessing a fine, free constitution. Being at first recommended as a late Grape, many failed in its cultivation by giving it too much heat; whereas it is actually an early Grape, is best suited for early work, and requires less heat than the Black Hamburgh. In some places, it has succeeded remarkably well in a cold orchard-house. If kept long, the berries are somewhat liable to crack. The finest examples lately seen were grown by Mr. Roberts, gardener at Gunnersbury, and it is now being largely grown for the London market.

Season.—Early.

Merits.—First class in every respect. Excellent in quality, and very handsome.

—A. F. Barron.

THE SEA EAGLE PEACH.

THE high character given to this Peach in the notice at p. 73 of the Florist and Pomologist, I can fully endorse. I can also bear additional testimony as to its valuable qualities as a good Peach for early forcing, and that it is also an excellent Peach to keep after being gathered. It sets freely,

and when forced in a house with the Royal George Peach, it makes an excellent succession to that fine old variety, and, moreover, really affords a succession in itself. I know of no Peach whose ripening period—extending, that is, from the time the first fruits are ready for table until the last are fit to gather—is so much prolonged. When it becomes better known, it will certainly be one of the most generally appreciated varieties in cultivation.—HENRY CHILMAN.

GLOXINIA CULTURE.

THE *Gloxinia* represents a charming family of the Gesneraceous order, which, like the Achimenes, is free-blooming, and of a highly decorative character. Mr. B. S. Williams remarks that the Gloxinias have become very numerous and very popular, since we have new hybrid varieties with pendulous flowers, with erect flowers, and with semi-double flowers, and these of almost every shade of colour. Of late years a very large number of varieties have been brought into cultivation, raised from seed, which, if of a good strain, produces varieties equal to those grown under names.

The seed should be sown in early spring, in well-drained pots that have been half-filled with broken potsherds. The soil should be of a very fine nature, such as a mixture of peat, leaf-mould, and sand. On this, after it has been made level by a light pressure, the seeds should be laid very thinly, and covered lightly with silver sand. If the soil be used somewhat moist, it will not be necessary to water it after the seed is sown, and it is of great importance that the soil be not saturated at any time, but simply kept moist. The pots can be slightly plunged in a hot-bed, or in a stove, and a piece of glass laid over each. When the young plants put in an appearance, the glass can be gradually raised till the plants are sufficiently strong to exist without its protection, but they should be guarded from hot gleams of sunshine and draughts. When the plants are strong enough to be handled without risk of injury, they should be pricked off singly into small pots, using a light, open compost, made up of peat, leaf-mould, and sand, in which the plants should be inserted lightly, and after potting be kept in a moist, close heat till fully established, when they can be placed with other stove plants.

The tubers should be potted in January and onwards to secure a succession of bloom. They should be shaken perfectly clear of the old soil in which they have been kept during the winter, and repotted in a compost made up of equal parts of fibry loam, coarse peat, and sheep's dung or well-decomposed manure, the latter in a dry state, and about one-sixth part of silver sand; sometimes lumps of charcoal and charred bones are used exclusively for drainage. If the bulbs are large, they may be at once placed in the blooming pots; if small, they should be placed in small pots, and as they advance shifted into the blooming pots. When potted, place the plants in the stove. What they require is a slightly humid atmosphere, and a fair amount of heat, and when they are coming into bloom they can be removed to the conservatory. A moist atmosphere is considered more conducive to their well-being than occasional syringings. When the flowering season is past, and the growth is nearly finished, they may be stood in the open air to ripen well before autumn, but must be protected from heavy rains; and when they are quite ripened, they must be stored in their pots, in some moderately cool, dry place, until again wanted for potting.—R. DEAN.

"RUNNING" IN CARNATIONS AND PICOTEES.

NOW that the blooming season is over, and we can look about us a little, will you suffer me to give you my year's experience on the above-named subject? In your volume for 1876 (which ought to be the Carnation and Auricula-grower's most trusty guide), some very valuable and interesting notes on the subject were printed, in one of that cherished series of articles by the father of Carnation-growers, my friend and master, Mr. Dodwell. After a perusal of these, it struck me I had better use my own judgment as to the exigencies of my situation, which is very fresh and open, for so near town. I accordingly made a compost last July twelvemonth of good mellow loam, sharp yellow sand, thoroughly sweet and powdered leaf-mould, and well decayed cow-manure, in exactly equal proportions. This I worried with a fork, whenever I felt lazy, till the potting season this year. I drained with, first, a concave oyster-shell, then two inches of crocks, then a layer of moss, with a few lumps of charcoal thrown in. Then I potted firmly

with the above compost, mixing in a handful of small lumps of charcoal. I used 7-in. pots for a single plant, and none others. I was very chary of water all through the year, and never top-dressed, or gave manure in any way, till the blooms were all coming well out, and I thought they would be late for the show, so on July 6th, 10th, and 14th, I gave manure-water made as follows:—Two handfuls of well-rotted stable-manure, to a six-gallon watering-pot of rain-water. This I used diluted, half and half with rain-water, filling up the six-gallon pot with water as I used up the fluid in it, but adding no more manure. My blooms were a little late, and next year I shall begin watering with this mixture on the 20th of June. I only had two run plants, both of which were sickly from the very first (Admiral Curzon and William Spoor), and one run bloom on an otherwise good plant of Edward H. Allen, S.F. (Dodwell). I think this shows that stimulants are not necessary for the plants, unless grown in a most unfavourable position.—Edward H. Allen, *St. John's, Putney, S.W.*

THE INTERNATIONAL FRUIT SHOW: SOME OF ITS LESSONS.

The grand show of Fruit tabled at the great International Show at Manchester was, without doubt, the most magnificent display ever seen in this country. Larger bunches of grapes have been shown, and, perhaps, heavier peaches, pines, and melons; but never has so much good fruit been seen at one time in this or any other country. It is not merely that the prize fruits, whether in single dishes or collections, were well nigh perfect, but that most of the fruits shown were worthy of prizes. The number of indifferent fruits could almost be counted on the fingers of one hand, while the good grapes, peaches, and nectarines could be seen by scores, fifties, hundreds. This shows how much average cultivation has advanced within the last few years. Early in the history of great shows, exceptionally fine fruits were exhibited, but the difference between these and the rank and file could only be fitly described as nowhere, in relation to the prize-takers. Doubtless, largely owing to the continuance and multiplication of exhibitions of fruit, the margin between prize dishes or collections, and others, has become less and less, until the former merge, as it were, into the latter. The same results are seen at most provincial shows, and the work of the judges is daily becoming more difficult, in consequence of the striking improvements in the generality of subjects shown for competition. But as most jurors are zealous horticulturists, no class can witness with more lively satisfaction this conclusive proof of the general advancement in cultivation.

Another striking feature, vividly illustrated by the Great International Show, is the tenacious clinging of the most successful cultivators to old-established varieties of fruits. Had not special prizes been offered for special varieties of Grapes, it is exceedingly doubtful if many sorts besides the Black Hamburgh and Muscat of Alexandria would have put in an appearance. Several others, notably Mrs. Pince's Muscat, the Black Muscat Hamburgh, and Madresfield Court were remarkably well shown. Dukes, Champions, Golden Hamburgh, also came to order in creditable condition. But in the open classes, it was interesting and instructive to note how popular were the Hamburghs and Muscats. Foster's Seedling and the old Buckland Sweetwater, Barbarossa, Black Morocco, and Black Prince appeared in units, while the two best and most popular of all grapes cropped up everywhere.

In the classes for Peaches and Nectarines, where exhibitors were left free to choose varieties, the same clinging to old sorts was more strongly developed. Amid about six score dishes of peaches, there were no fewer than fourteen of Royal George, eleven of Grosse Mignonne, ten of Noblesse, and ten of Bellegarde. Neither did this favouritism of old sorts arise from the fact that others were neither grown nor represented; for besides these popular varieties, nearly a score of other sorts were represented at the show. The only ones amongst them that mustered in force being the Princess of Wales, a large, rich, yellowish-fleshed late peach, of most exquisite flavour when grown under glass; this does not ripen well in the open air, unless in the most favoured localities, but in such situations or under glass it is likely to prove a most formidable rival to the Walburton Admirable.

In Nectarines, this clinging to old favourites was still more apparent. In about 120 dishes, there were twenty-four of the Pitmaston Orange, while Rivers's Orange and the Pine-apple, both

pretty full of the Pitmaston Orange blood, made up nine more between them. As I confess to a preference for this Pine-apple over all yellow-fleshed Nectarines, I must admit to my surprise that it was only represented by five dishes, while the old Pitmaston was twenty-four strong.

The same tale was told by the Apples and Plums. The season of Pears was not yet, at the end of August, at Manchester, though Williams' Bon Chrétien mustered in force. What a pity some of our hybridists cannot Bon Chrétienise in flavour some of our best winter Pears. The peculiarly rich aroma of this fine Pear is more generally liked than any other. But, alas! we can hardly say 'tis here, before it has gone into sleepy mealiness or sheer rottenness.

But to return to our proper theme. It is singular to note the widely-differing estimates of the value of novelty that prevails among plant and fruit-growers. With the former, it is over, with the latter, it may be under-estimated. Anything better or more beautiful than we already possess should ever be welcomed with avidity. But, surely, it is a vulgar error to prefer things merely because they are new. Fruit-growers have proved themselves far above such errors. So much, however, can hardly as yet be said of the growers and judges of plants and flowers. Not a few of both seem under a sort of novelty mania or spell. A new thing affects their judgment like a whiff of laughing-gas. There is some excuse for cultivators, none for jurors, for in all great shows there are special prizes for new things. Beyond this, mere novelty, unless combined with higher merits than existing varieties, should have no power in swaying awards. It has none with the judges of fruits, though it is generally felt it has far too much influence over the majority of judges while adjudicating on the merits of plants and flowers. Will any one undertake to explain why this difference, and where lies the reason for it, or what is the benefit?—D. T. Fish, *Hardwicke.*

NEW CARNATIONS AND PICOTEES.

"These things we would buy ourselves, and therefore recommend them."

MY friends, Mr. R. Gorton of Eccles and Mr. W. M. Hewitt of Chesterfield, have recently originated some beautiful varieties of these lovely flowers, of which, having been privileged to grow them on trial, I append descriptions:—

E. S. Dodwell (Hewitt), C.B.—A very fine flower, in a class of fine flowers. Of full size, finely formed, with large broad petals of great substance, smooth, and richly marked with deep crimson and purple, it will, I venture to say, make its mark whenever well grown, despite the number of formidable competitors it has to meet.

Master Fred (Hewitt), C.B.—The highest-coloured C.B. I have yet seen, and undoubtedly the best of the high-coloured section. A grand addition to its class, and a commanding influence, where well done on the exhibition-table. To some tastes, in its earlier stages it may seem slightly too fiery, but as the flower matures, the colour tones, and the richness and regularity of its markings are exceedingly beautiful. A good grower, of full size, fine form, great substance, and perfectly smooth. It won the premier prize, and took 1st, 2nd, and 3rd in its class, at Manchester, in August, 1880.

Sir Garnet Wolseley (Hewitt), P.P.B.—A seedling from Mayor of Nottingham, P.F. A flower of great refinement and beautifully marked; worthy a place in the most select of collections.

Muriel (Hewitt), heavy-edged purple Picotee.—A broad-edged purple, on a pure white ground; smooth, and of great substance. It won the premier prize at Manchester on August 9th, though closely run by a fine specimen of Tinnie shewn by Mr. B. Simonite, a fact which in itself stamps the value of the variety. An excellent addition to an already rich class.

Evelyn (Hewitt), light-edged purple Picotee.—Medium size, with a large, broad petal of the true "Mary" type, without any of the discoloration which occasionally disfigures that fine old variety. Smooth, of great substance, and exquisitely pure.

William Skirving (Gorton), C.B. or P.P.B.—A seedling from Rifleman, it rivals that grand variety in the beauty of its form and form of petal, and is very distinct in its colours. This and Harrison Weir, also a seedling from Rifleman—a variety I have had the good-fortune to raise—are the most refined crimson bizarres I have ever seen, whilst they leave nothing to be desired in substance, smoothness, and size. Possibly, as they age something new may get in advance of them, but I cannot imagine the attainment of higher properties in the Carnation.

Saturn (Gorton), another C.B. or P.P.B. from the same source, is only surpassed by William Skirving, and deserves a place in every collection.

Tim Bobbin, Rob Roy, and Robin Hood, three Rose-flakes, also seedlings of Mr. Gorton's raising, are unquestionably the masters of the class. Seedlings from John Keet, they quite distance the parent, and seem to leave nothing more possible for the seedling-raiser in their class. They are quite distinct, each showing different shades of rose, with a definiteness of marking which may be equalled, but cannot be surpassed. The specimen of Tim Bobbin to which the Premier prize was awarded as the best Carnation in the whole exhibition at Manchester on August 9th, was the finest Rose-flake I had ever seen. It was "beautiful exceedingly" in colour, and surpassingly rich in its markings.

I have notes of various other fine new things, but as I believe they will not be offered this season, it is unnecessary to describe them. To those who may care to know my opinion of my own bantlings, I shall be glad to send a descriptive list on application.—E. S. Dodwell, 11 *Chatham Terrace, Larkhall Rise, Clapham, S.W.*

The following selection from his fine batch of Seedlings, is this year offered to his brother-florists by Mr. E. S. Dodwell, of Chatham Terrace, Larkhall Rise, London, who, we are sorry to find, is compelled, by failing health, shortly to leave the suburbs

of London for the purer air of the vicinity of Oxford. The varieties sent out last year have taken such a very high position, that those now offered may be expected to sustain the repute of their predecessors. Owing to the circumstances of removal, they must be cleared at once.

CARNATIONS.

EDWARD ADAMS: A fine S.B. of the "Curzon" type (a seedling from "Dreadnought"), and worthy to rank beside that grand old variety. Good white, brilliant scarlet, and maroon; smooth and full size.

HARRY TURNER, S.B.: A seedling from "Sir Joseph Paxton," on which it is an appreciable improvement.

JAMES MCINTOSH, S.B.: A most beautiful variety, richly marked with brilliant scarlet and maroon on an exquisite white; petal smooth and finely formed; size medium.

PHILIP THOMAS: A light S.B., of the finest possible white ground, boldly marked with brilliant scarlet and light maroon; full size, smooth, and of fine substance; one of the best.

RAYNER JOHNSON, S.B.: An extra fine variety, not so brilliant in the scarlet as "Curzon," but in all other respects fit to be placed with that grand old flower.

THOMAS BOWER, S.B.: A full and full-sized flower, grandly marked with brilliant scarlet and maroon; good white.

DR. CRONIN, C.B.: A "Captain Stott" flower; a seedling from that richly-marked variety, but fuller and a much better grower.

HARRISON WEIR, C.B.: One of the finest varieties of its class. A seedling from "Rifleman," but very distinct in colour, it rivals that fine variety in the excellence of its habit, form, quality, smoothness, definite markings, and substance, and will frequently be found in front of it on the exhibition-table.

MRS. GORTON, C.B.: A large-petalled, beautifully formed variety, of exquisite white and quality, smooth, and very definitely marked.

H. K. MAYOR, P.P.B.: A large variety, of extra fine quality, in the way of "Wood's Purity;" very boldly, though, like "Purity," lightly bizarred, with light pink and bright purple.

SQUIRE LLEWELYN, P.P.B.: The best, most richly marked pink and purple Mr. Dodwell has yet grown.

SQUIRE PENSON, P.P.B: A beautiful pink and purple, of excellent habit, smooth, finely formed, well marked, and of great substance.

THOMAS TOMES, S.F.: A seedling from "Sportsman," with the richest scarlet and purest white Mr. Dodwell has yet seen; fine in form and habit, smooth, and of great substance.

MRS. MATTHEWS, R.F.: A Seedling from "John Keet," which it follows and fairly rivals, save that the colour is of a deeper, slightly purplish, tint.

PICOTEES.

ELSIE GRACE, light red-edged: A Seedling from "Mary" (Simonite), light purple-edge; it fully equals that splendid variety in the size and form of its petal, and has an even better habit. Mr. Dodwell regards this as the best of its class he has yet seen in his garden, the dry and smoke-begrimed atmosphere of which, however, injuriously affects the delicacy of colour and purity of ground—the especial attribute of these lovely flowers. The opinion above given is, however, offered after comparison with the best varieties available.

WINIFRED ESTHER, medium red-edged, sometimes heavy: A Seedling from "Wm. Summers," but with more colour than its parent; a fine show variety.

MISS GORTON, light rose-edged: Mr. Dodwell pronounces this to be the best of his light-edged roses.—M.

A LARGE GOOSEBERRY TREE.

AN old and still healthy plant of the Red Warrington Gooseberry, trained upon a brick wall with a north aspect, and bearing heavy crops yearly, may be considered worthy of notice in the pages of the POMOLOGIST, not only on account of its age and large dimensions, but also, and more particularly, for its usefulness in supplying the dessert with good gooseberries considerably later than they can be had by any means of retarding that can be adopted in bush cultivation, the position of the fruit being effectually shaded and cool, and protection being easily secured by a covering of net.

The bush or tree in question had been planted at a distance of 8 ft. from the corner of a west wall, where it had grown to its height of 12 ft., and filled the space to the corner, thirty years ago. The age, therefore, of this uncommon specimen cannot be far short of fifty years. Some of its branches near its base are still lengthening towards the east, one of them having reached the distance of 24 ft. 1 in. from the stem, while the corner of the wall has been made its barrier on the opposite side.

The mode of training which has been adopted is the fan shape, but at a distance it has more the appearance of a tree. So much, indeed, is this the case, that I have heard it jocularly remarked by visitors in passing, that it would puzzle the witty Irishman who made choice of the Gooseberry Tree on which to be hanged, and offered to wait until it grew to a sufficient size.—J. WEBSTER, *Gordon Castle Gardens.*

PEAT AS AN ANTISEPTIC.

IT seems to me extraordinary that we do not make more general use of the antiseptic properties of Peat, for that it is in its nature highly antiseptic, is both an actual and scientific fact. I have found it most invaluable for bulbs and other subjects particularly liable to rot; it acts on the entire compost somewhat like charcoal in arresting and preventing decay. A handful of good, fibry peat, mixed into the compost in potting each bulb, would, I am sure, save us gardeners a world of trouble arising from the natural tendency to rot, which is so inseparably a feature of the Hyacinth tribe.—EDWARD H. ALLEN, F.R.H.S., *St. John's, Putney Hill, S.W.*

W. H. Fitch. del.

Chromo. P. Stroobant, Chent.

Apple Stirling Castle

THE STIRLING CASTLE APPLE.

[Plate 548.]

OUR plate of this sterling variety was drawn last autumn by Mr. Fitch, from specimens kindly supplied by Mr. F. N. Dancer, of Turnham Green. It is not too much to say, and our illustration will bear us out in this remark, that it is one of the finest of all early kitchen apples; and it possesses another quality, of the utmost importance to the grower—namely, that it is a heavy and a certain cropper. It has proved about London to be so exceptionally reliable in this respect, that it might almost be permitted to speak of it as a "perpetual" bearer. Mr. Dancer has again had it this season in exceptionally fine condition, quite small trees having been heavily laden with fruit, so that the branches were weighed down to the ground with the grand fruit with which they were thickly studded from base to apex.. Mr. Dancer, indeed, speaks of it as one of the best and most remunerative apples that a market-gardener can grow, and asserts that if he were desirous of planting several acres of apples, he would confine the planting almost wholly to the Stirling Castle. It is in all respects an excellent second early culinary apple, coming into use in September. Moreover, it does well as a bush tree, and in that form is so largely grown by Mr. Dancer.

It is only during the past few years, when so many old favourites have sustained more or less severe damage from the severity of the seasons, that the high merits of this variety have been fully recognised. It is of Scotch origin, having been raised in a garden near Stirling Castle, where the original tree, we believe, still exists. Both in the North and in the South it is held in great repute as a free-bearing culinary apple. It may be described as intermediate in character, between Small's Admirable and Hawthornden; but though ripening early, it keeps long in condition, being useful till after Christmas, and on this account is much to be preferred.

The fruits are large, regular in outline, roundish-oblate, or somewhat flattened. The skin is of a pale green, becoming yellow when ripe, and having a pale flush of pale orange-red on the cheek exposed to the sun. The stalk is rather slender, about an inch long, set in a broad, deep, very evenly rounded basin; and the eye is small, half-closed, and also set in a deepish hollow, which is frequently covered with a patch of russet, giving it a somewhat singular appearance. The flesh is white, very tender and juicy, and having a pleasant, sub-acid flavour, resembling, as Dr. Hogg remarks, that of the Hawthornden.

The tree, as already stated, is a very heavy and almost certain cropper, and is exceedingly well adapted for the bush form of culture. It is so good and useful an Apple, that those who have it not should procure it, either in the form of young trees, or as grafts to replace such inferior sorts as may have been accidentally planted, and have already become well established.—T. Moore.

ASPARAGUS ON CLAY SOIL.

WHERE there's a will there's a way, and this [September] is the best time to plant Asparagus. This sea and sand-loving plant does not like a cold clay soil, and it may be (but should not be) a hard task to make a fine plant, wherefrom to cut fat sticks, on a soil that may be compared to wet putty in winter and Babylonian brick in summer. Before I became a Hermit, the heavy undrained clay at Hermitage had never borne a crop of Asparagus, but as I brought with me the experience of a quarter of a century of horticultural work on the worst soils that could be found in Stoke Newington, I ordered a beginning to be made for Asparagus at the upper end of a piece of very wet grass land, that sloped very slightly from the site selected towards the natural flow of the water. The first step taken was to sow a bed in a sheltered garden a furlong distant, where we could not afford room for our bearing beds, the only object being to obtain plants to begin with. The rule determined on was to form two beds every year until a certain space was covered, each bed to be 4 feet wide and 60 feet long, on a foundation of unmitigated clay, a considerable piece of which was to be converted into a kitchen and reserve garden.

We next had carted in, for "a mere song,"

a grand lot of rubbish, from some buildings that were in process of demolition. This was knocked over, and the large stuff wheeled away as metal for roads, the woody stuff went towards the chimneys, and the mixture of plaster, mortar, sand, and small broken brick remained as the raw material for the manufacture of Asparagus.

This stuff being laid in convenient ridges, the top spit of grass turf was taken off on a space of 66 ft. long by 14 ft. wide, leaving an ample margin for two 4-ft. beds and a 2-ft. alley between. But the margin was none too much, as you will see. Then we brought to the spot all the old leaf-soil, and clearings of melon pits, and scrapings of turf from odd corners—a sort of indefinite infinity of all kinds of rubbish, but every bit containing something suitable to feed a plant. All these things—the top turf, the calcareous rubbish, the leaves, and the sweepings—were thrown together methodically, and the mixture made a great raised bed, looking very grey and stony, except where chips of live turf stood out, to make a few dots of greenness.

This being accomplished in the month of March, the new bed was at once planted with Ashleaf Potatos; while, on the other side, in the sheltered garden, the Asparagus to follow the Potatos was making a beginning of its noble career. The Potatos were a grand crop.

When September arrived and the "taturs" were gone, the new big bed was well stirred over, and some fat dung was laid in the trenches as the work went on. All being made tidy, the ground was pegged out to form two beds of 4 ft. each, with a 2-ft. alley between; and then we made shallow furrows for the plants. These were taken carefully, so as to leave the seed-bed well occupied, to furnish plants for the next year without need for another sowing. In planting, we put single plants in their places, and slightly covered them with the finest of the stuff near at hand; and when this was done, the earth from the alleys and outsides and ends was strewn over and amongst them, all lumps and stones being thrown out, and the bed was then raked over and the rows carefully trodden, to firm the plants in their places.

As regards distances, we began with a line down the centre of each bed, and plants at 18 inches' distance. From this, each way was a line 15 inches distant, and plants 18 inches apart. Thus, the two outside rows were 9 inches distant from the alleys, and the plants throughout were 18 inches by 15 inches apart, every one carefully singled in the process. They were green when planted, and so continued for a month, when they were done brown and were cut down, and the work of the season came to an end in the laying-on of a thick top-coat of fat dung, that had been saved for the purpose under cover.

Early in the subsequent spring the ground was very carefully pricked over between the rows, and very thin sowings of Radishes and Lettuces were made; these were removed from time to time, either as weeds or as crop. Where a lettuce stood near an Asparagus crown, he had to take flight, along with a groundsel or a chickweed; but enough remained to pay the rent, and came to perfection, and did no harm. We did not cut a stick the second year, but we cut fairly the third year, and greatly the fourth; and, except for the circumstances that bring mundane things within finite measures, we might have gone on cutting our sticks for ever.

For three years we continued to lift plants from the original seed-bed to furnish the new bearing beds that were made each spring, and having borne a crop of Potatos, were planted with Asparagus in September. The management never varied, except that, as we found the growth very strong, we gave the plants a distance of 2 ft. in the rows, still keeping to the 15-in. measure between them. A dressing of fat dung was put on the top, after cutting down in autumn, and we soon learned to give another dressing in spring, which was peculiarly beneficial, and must have a paragraph to itself.

It is not the rule to protect Asparagus. Now, our lower garden at Hermitage was blessed in spring with a strong supply of pure air from the hyperborean regions. When a frosty wind swept over the marshy meadows and slid through the rising grass like a flash of lightning with a razor-edge, I used to notice that many a fine stick just rising would be cut off, and many that followed were flinty in their hardness, owing to the check to growth from the sudden onslaught of the east wind. And so I had a great sweep-up made of all kinds of light rubbish. Rough grass was cut from neglected corners of the shrubbery, leaves and sweepings

of the hay-loft were gathered together, and this light stuff was spread over the crowns in little heaps. The rising sticks often lifted up the light protection in a lump, like the head of a Mushroom, and the sticks so protected were as green as needful, and very much more fat and tender than such as had to fight through without any such help. It became, therefore, the practice to save leaves and light litter for the spring dressing of the Asparagus beds, and the stuff was never put on until it was really wanted, because it might have been blown away, or might have quickened growth, which, in so exposed a situation, was not to be desired.

It is the custom, I observe, to put a crop of Cauliflower, or some such thing, in the alleys between Asparagus beds. This, in my opinion, is bad practice, allowable only in the first season, after which it becomes a profitless game of burning the candle at both ends. Those alleys should be kept clean, and the outside rows of Asparagus will root into them and enjoy the range; therefore, to dig the alleys is to do mischief. Far better to keep them open, for the roots to run below and for the cultivator to run above. In the course of his running, he may find it expedient, as I have done, to stake his Asparagus beds with light brushwood, to afford support, for when the top grass is snapped short off by the wind, the growth of the next year's crop is prejudiced. Where frost and wind are unknown, it will, of course, be waste of time either to protect or support Asparagus. —Shirley Hibberd.

*** At Trentham, where the soil is heavy, and new Asparagus beds have been lately made to meet the wholesale destruction of the past few winters, the advantage of autumn over spring planting is very obvious in the much more vigorous condition of those of the autumn or late summer-made beds.—M.

MANCHESTER CARNATION AND PICOTEE SHOW.

THE supplementary exhibition of Carnations and Picotees extemporised—under the leadership of Mr. Richard Gorton—by the majority of the northern growers interested in the National Carnation and Picotee Society, who could not hope, from the character of the season, to preserve their flowers for the date of the International Show, was held in the Town Hall, Manchester, on August 9th, and was, as an exhibition of florist flowers pure and simple, undoubtedly the best the northern growers have yet made. Possibly, in the past as fine flowers may have been shown, as a whole, though several of the seedlings produced certainly have never been surpassed—we question if quite equalled; but our remark is intended to indicate the general effect, and in this the known good-taste and keen eye for a picture, possessed by Mr. Gorton, was exceedingly delightfully apparent. In place of an incongruous jumble of flowers and unsightly bottles, such as it has been our lot on some occasions to see—most offensive to the organs of order and arrangement — the grouping was exceedingly effective, regular without formality, and symmetrical without primness. The setting, also, of ferns, mosses, and foliage plants was charming, bringing out and relieving the brilliant colours of the flowers. Altogether, it was an exhibition florists might be proud of, and we trust it is the precursor of many of a similar character to follow.

The judges in the leading classes were:—Mr. Dodwell, of Clapham; Mr. W. M. Hewitt, Chesterfield; and Mr. James P. Sharp, Birmingham. Mr. Simonite, Mr. J. Booth, and Mr. Wm. Mellor acted in the classes for nine and six dissimilar, respectively. Annexed we give the awards:—

Carnations.

Class A. 12 *blooms, dissimilar.*—Equal 1st, Mr. Gorton and Mr. B. Simonite; Mr. Gorton's flowers were Tim Bobbin, R.F., which was selected as the premier Carnation of the show, a grand new variety of the John Keet type, but a distinct advance on that fine flower; Seedling, P.P.B., of the Rifleman type of petal, fine in every respect; Jim Whittaker, S.B.; Dodwell, a flower of good form, full size, and well marked, but dull in the scarlet; Rob Roy, R.F., evidently from the same source with Tim Bobbin, but very distinct in colour; Jas. Cheetham, S.F.; Seedling, R.F.; Wm. Skirving, C.B., commented upon in our report of last year's exhibition, and now fully sustaining its high repute; Seedling, P.P.B., and Seedling, C.B., both fine; Admiral Curzon, S.B.; Clipper, S.F., and Robin Hood, R.F. Altogether, a collection of the greatest excellence. Mr. B. Simonite's flowers which were unsurpassable in their character, well worthy of the exhibitor's repute, were Robert Lord, S.B.; James Douglas, P.F., a splendid example of this fine variety; Sarah Payne, P.P.B.; Seedling, R.F.; J. B. Sharp, a seedling P.F. which promises to surpass James Douglas, by the same raiser; Crimson Banner, C.B., too narrow in its markings, though otherwise of much excellence; Seedling, S.F., fine; Admiral Curzon, S.B., the finest Curzon of the show; John Simonite, C.B.; Seedling, R.F.; James Taylor, P.P.B., and Frank Simonite, a seedling, S.F. of much promise; 2nd, Mr. J. Booth, Failsworth, Manchester, with Sportsman, S.F.; Jas. Douglas, P.F.; William Laing, R.F.; Clipper, S.F.; Eccentric Jack, C.B.; John Keet, R.F.; Earl of Wilton, P.F.; Seedling, C.B., a good flower, but rather too heavy in colour to our taste; Admiral Curzon, S.B.; Falconbridge, P.P.B.; Annihilator, S.F.; and Garibaldi, S.B., a stand of large, well-grown flowers, but slightly waning in colour, from age. 3rd, Mr. T. Bower, Bradford, Yorks., had twelve very fine, bright, and well-marked specimens, which suffered only from the opposite fault, in comparison with Mr. Booth's, viz., somewhat lacking maturity. 4th, Mr. E. Booth, Moberley, Cheshire. 5th, Mr. Jno. Beswick, Middleton, Manchester. 6th, Mr. George Rudd, Undercliffe, Bradford.

Class C. 12 *blooms, 9 dissimilar.*—1st, Mr. Wm. M. Hewitt, Chesterfield, with Falcon-

bridge, P.P.B.; Admiral Curzon, S.B.; James Merryweather, R.F.; Seedling, S.B.; Seedling, S.B.; John Ball, S.F.; Master Fred, C.B.; Seedling, S.F.; Albion's Pride, C.B.; Seedling, S.B.; E. S. Dodwell, C.B.; and Seedling, S.F. Mr. Hewitt's seedling crimson bizarres Master Fred and E. S. Dodwell, are varieties of the highest character, but the first bloom having fallen, Mr. Hewitt was reduced to the necessity of showing the secondary flowers. There can be no doubt, as remarked last year, that the exhibitions of the National Carnation and Picotee Society, both north and south, are bringing a number of new flowers of the highest excellence to the front. 2nd, Mr. John Fletcher, with Seedling, S.F.; John Keet, R.F.; Seedling, P.F.; Rifleman, C.B.; Unexpected, P.P.B.; Seedling, S.B.; Seedling, S.F.; Seedling, R.F.; Robert Lord, S.B.; Seedling, P.F.; and Lord Napier, S.B.

Class E. 6 *blooms, dissimilar.*—1st, Mr. E. Schofield, Jubbergate, Wortley, near Leeds, with Mars, S.B.; James Merryweather, R.F.; Sportsman, S.F.; Jenny Lind, C.B.; Admiral Curzon, S.B.; and Jno. Keet, R.F. 2nd, Mr. John Whittaker, Royton, Rochdale.

Single blooms. Scarlet Bizarres: 1st, 3rd, and 5th, Mr. B. Simonite, with Seedling 209, S.B., Admiral Curzon, and Garibaldi; 2nd and 6th, Mr. J. Booth, with Admiral Curzon and Moreury; 4th, Mr. R. Gorton, with Admiral Curzon.

Crimson Bizarres: 1st and 5th, Mr. R. Gorton, with Black Diamond and Saturn; 2nd, Mr. J. Booth, with Eccentrie Jack; 3rd, Mr. G. Rudd, with J. D. Hoxtall; 4th and 6th, Mr. T. Bower, with Milton.

Pink and Purple Bizarres: 1st and 6th, Mr. J. Booth, with Jas. Taylor; 2nd and 5th, Mr. B. Simonite, with Sarah Payne and J. Taylor; 3rd, Mr. G. Rudd, with Sarah Payne; 4th, Mr. R. Gorton, with Saturn.

Scarlet Flakes: 1st, 2nd, and 3rd, Mr. J. Booth, with Sportsman, Annihilator, and James Cheetham; 4th, 5th, and 6th, Mr. B. Simonite, with Frank Simonite.

Rose Flakes: 1st and 2nd, Mr. R. Gorton, with Robin Hood and Tim Bobbin; 3rd and 4th, Mr. T. Bower, with John Keet; 5th and 6th, Mr. Booth, with James Merryweather and Sibyl.

Purple Flakes: 1st and 3rd, Mr. G. Geggie, with Dr. Foster and Lord Milton; 2nd, Mr. Booth, with James Douglas; 4th and 6th, Mr. B. Simonite, with J. Douglas and J. P. Sharp; 5th, Mr. Bowor, with James Douglas.

Class G. 12 *Selfs or other varieties.*—Mr. R. Gorton was the only exhibitor, and was awarded the first prize.

Premier Carnation.—Tim Bobbin, R.F., a seedling shown by Mr. R. Gorton, of Eccles.

PICOTEES.

Class B. 12 *blooms, dissimilar.*—1st, Mr. B. Simonite, with Mrs. Niven, H.P.; Mrs. Gorton, L.R.; Fanny Helen, H.RO.; Mary, L.P.; Miss Wood, L.R.; Morna, H.R.; Violet Douglas, L.R.; J. B. Bryant, H.R.; Seedling, H.RO.; Tinnie, H.P.; and Seedling, H.RO. 2nd, Mr. R. Gorton, with John Smith, H.R.; Mrs. Summers, H.P.; Edith Dombrain, H.R.; Zerlina, H.P.; Seedling, L.R.; Ann Lord, L.P.; Mary, L.P.; Miss Horner, H.R.; Alliance, H.P.; Seedling, H.RO.; Fanny Helen, H.RO.; and Rosy Queen, H.S. 3rd, Mr. J. Booth. 4th, Mr. Geo. Rudd. 5th, Mr. E. Booth. 6th, Mr. John Beswick.

Class D. 12 *blooms*, 9 *dissimilar.*—1st, Mr. Thomas Bower, with Her Majesty, L.P.; Juliana, H.S.; Mrs. Dodwell, H.R.; Edith Dombrain, H.RO.; John Smith, H.R.; Tinnie, H.P.; Mrs. Small, H.R.; Master Norman, H.R.; Zerlina, H.P.; Wm. Summers, M.R.; Mary, L.P.; and John Smith, H.R. 2nd, Mr. Jno. Fletcher, with Mrs. Dodwell, H.R.; Ann Lord, L.P.; Royal Visit, H.RO.; Her Majesty, L.P.; Mrs. Small, H.R.; Seedling, H.P.; J. B. Bryant, H.R.; Seedling, M.P.; Edith Dombrain, H.RO. 3rd, Mr. W. M. Hewitt, with Muriel, H.P. (the premier Picotee of the show, a fine variety of great promise); Miss Lee, H.R.; J. B. Bryant, H.R.; Mrs. Niven, H.P.; Zerlina, H.P.; Ann Lord, L.P.; Mary, L.P.; Minnie, L.P.; and Master Norman, H.R.

Class F. 6 *blooms, dissimilar.*—1st, Mr. E. Schofield, with Rev. F. D. Horner, L.R.; Miss Horner, H.R.; Mrs. Bower, L.R.; Zerlina, H.P.; Mrs. Nicholls, L.R.; and Lady Holmesdale, M.R.

Single Blooms. Heavy-edged Red.—1st and 4th, Mr. R. Gorton, with John Smith; 2nd and 3rd, Mr. Booth, with the same and Brunette; 5th, Mr. G. Rudd, with Mrs. Dodwell; and 6th, Mr. T. Bower, with J. Smith. *Light-edged Red.*—1st and 6th, Mr. B. Simonite, with Mrs. Gorton and Violet Douglas; 2nd and 3rd, Mr. G. Rudd, with Thomas William; 4th, Mr. John Beswick, with Violet Douglas; 5th, Mr. W. M. Hewitt, with Mrs. Bower. *Heavy-edged Purple.*—1st, 2nd, 3rd, and 4th, Mr. B. Simonite, with Mrs. A. Chancellor, Mrs. Niven, and Zerlina; 5th, Mr. R. Gorton, with Mrs. Summers; 6th, Mr. G. W. Schofield, with Norfolk Beauty. *Light-edged Purple.*—1st and 6th, Mr. Booth, with Ganymede and Mary; 2nd, Mr. G. Rudd, with Minnie; 3rd and 4th, Mr. G. Schofield, with Mary; 5th, Mr. G. Geggie, with the same. *Heavy-edged Rose or Salmon.*—1st, Mr. G. Geggie, with Miss Horner; 2nd, 3rd, and 6th, Mr. G. Rudd, and 4th Mr. Booth, with the same variety; 5th, Mr. R. Gorton, with Fanny Helen. *Light-edged Rose or Salmon.*—1st, 3rd, and 5th, Mr. G. Geggie, with Miss Wood; 2nd and 4th, Mr. R. Gorton, with Mrs. Nichols and a Seedling; 6th, Mr. G. Rudd, with a Seedling.

Premier Picotee.—Muriel, H.P., a seedling shown by Mr. W. M. Hewitt, of Chesterfield.

—M.

NATIONAL CARNATION AND PICOTEE SOCIETY.

NORTHERN SECTION.

THE Exhibition of the National Carnation and Picotee Society (Northern Section), was an excellent addition to and worthy of the lovely objects with which it was associated. The lateness of the date had necessarily thrown out the majority of the growers around Manchester, but the growers from Newcastle and the cultivators from the Yorkshire Hills were in capital condition, and brought up flowers of great excellence. In the principal classes, twelve dissimilar, Mr. R. Lord, of Todmorden, who from his backward situation can so rarely join his confrères on an average day, was in brilliant form, and set a splendid lead, which was well followed by Mr. Flowerday, of Gateshead; Mr. Bower, of Bradford, doing the same in the class for nine dissimilar; he, again, being equally well followed by Mr. Robert Scott, of Newcastle. In the class for nine dissimilar Picotees, Mr. Scott took the first place, and but for the fact that the

colours in the Carnations had been toned almost to the point of bleaching, a result due, we believe, to over-close covering, the growers from Newcastle would be competitors of the very first order. The judges were Mr. C. Turner, of Slough; Mr. Jon. Booth, Failsworth; and Mr. Dodwell, of Clapham, assisted in the classes for single specimens by Mr. Edward Adams, Swalwel, Gateshead.

Annexed is the list of the awards :—

CARNATIONS.

Class A. 12 *blooms, dissimilar.*—1st, Mr. Robert Lord, Tormorden, with Admiral Curzon, C.B. (Premier Carnation); Lord Milton, C.B.; Earl of Wilton, P.F.; Robert Lord, S.B.; Mrs. Dodwell, R.F.; Clipper, S.F.; Fanny Gardiner, S.B.; Mrs. Tomes, R.F.; Rayner Johnson, S.B.; Shirley Hibberd, C.B.; Sportsman, S.F.; and George, S.B. 2nd, Mr. Thomas Flowerday, Gateshead, with Sarah Payne, P.P.B.; Wm. Harland, S.F.; Falconbridge, P.P.B.; Sporting Lass, P.F.; Rose of Stapleford, R.F.; Isaac Wilkinson, C.B.; Admiral Curzon, S.B.; Jas. Flowerday, R.F.; Eccentric Jack, P.P.B.; John Harland, C.B.; Rifleman, C.B.; and Warrior, C.B. 3rd, Mr. Wm. Taylor, Middleton, Manchester. 4th, Mr. B. Simonite, Sheffield. 5th, Mr. John Beswick, Middleton.

Class C. 12 *blooms*, 9 *dissimilar.*—1st, Mr. Thomas Bower, Bradford, with Lord Milton, C.B. (2); Maid of Athens, R.F.; Sibyl, R.F. (2); Dreadnought, S.B. (2); John Keet, R.F. (2); Squire Meynell, P.F.; Lovely Ann, R.F.; Falconbridge, P.P.B.; and Rifleman, C.B. 2nd, Mr. Robert Scott, Newcastle, with Sarah Payne, P.P.B.; Rose of Stapleford, R.F.; Falconbridge, P.P.B.; William Harland, S.F.; Mars, S.B.; Eccentric Jack, P.P.B.; James Flowerday, R.F.; Rifleman, C.B.; Sarah Payne, P.P.B.; Eccentric Jack, P.P.B.; Dan Godfrey, S.F.; and Mayor of Nottingham, P.F. 3rd, Mr. Geo. Rudd, Bradford. 4th, Mr. G. Thornley. 5th, Mr. Thomas Mellor, Ashton-under-Lyne. 6th, Mr. Joseph Chadwick, Dukinfield.

Class E. 6 *blooms, dissimilar.*—1st, Mr. E. Pohlman, Halifax, with Sportsman, S.F.; Jenny Lind, C.B.; J. D. Hextall, C.B.; Jno. Keet, R.F.; Dr. Foster, P.F.; and Lord Milton, C.B. 2nd, Mr. J. Witham, with Fanny Gardiner, S.B.; Jas. Douglas, P.F.; Sportsman, S.F.; Purity, P.P.B.; James Merryweather, R.F.; and Admiral Curzon, S.B. 3rd, Mr. John Whittaker, Royton. 4th, S. Barlow, Esq., Stakehill House, Castleton.

Class G. *Single Blooms: Scarlet Bizarres.*—1st, 2nd, 3rd, 4th, and 5th, Mr. R. Lord, with Admiral Curzon, grand blooms. 6th, Mr. T. Bower, with the same.

Crimson Bizarres: 1st, 2nd, and 5th, Mr. R. Lord, with Lord Milton; 3rd, with Rifleman; 4th, with Unexpected. 6th, Mr. T. Bower, with Rifleman.

Pink and Purple Bizarres: 1st, Mr. T. Bower, with Sarah Payne; 3rd, with Falconbridge. 2nd, Mr. R. Lord, with Shirley Hibberd; 4th, with Albion's Pride; and 5th, with Eccentric Jack. 6th, Mr. B. Simonite, with Seedling.

Purple Flakes: 1st, 2nd, and 5th, Mr. R. Lord, with James Douglas; 3rd and 4th, with Earl of Wilton. 6th, Mr. W. Whittaker, with Lady Peel.

Scarlet Flakes: 1st, Mr. Thomas Flowerday, with Wm. Harland. 2nd, 4th, and 5th, Mr. R. Lord, with Sportsman; 3rd and 6th, with Clipper.

Rose Flakes: 1st, Mr. R. Lord, with Lovely Ann; 2nd, with Mrs. Dodwell; and 4th, with John Keet. 3rd and 5th, Mr. T. Bower, with John Keet. 6th, Mr. Wm. Taylor, with Apollo.

The Premier Carnation was Admiral Curzon, S.B., exhibited by Mr. R. Lord, Todmorden.

PICOTEES.

Class B. 12 *blooms, dissimilar.*—1st, Mr. R. Lord, Todmorden, with Zerlina, H.P.; Thomas William, L.R.; Mrs. Allcroft, L.RO.; John Smith, H.R.; Minnie, L.P.; Miss Horner, H.RO.; Ann Lord, L.P.; Elsie Grace, L.R.; Mrs. Summers, H.P.; Brunette, H.R.; Medina, H.P.; and Fanny Helen, H.RO. 2nd, Mr. Thomas Flowerday, Gateshead, with Thomas William, L.R.; Robert Scott, H.R.; Minnie, L.P.; Edith Dombrain, H.RO.; Zerlina, H.P.; Miss Wood, L.RO.; Fanny, M.P.; J. B. Bryant, H.R.; Amy Robsart, L.P.; Mrs. Dodwell, H.R.; Mary, L.P.; and Northern Star, L.RO. 3rd, Mr. John Beswick, Middleton. 4th, Mr. George Rudd, Bradford. 5th, Mr. B. Simonite, Sheffield. 6th, Mr. Joseph Chadwick, Dukinfield.

Class D. 12 *blooms*, 9 *dissimilar.*—1st, Mr. R. Scott, Newcastle-on-Tyne, with Thomas William, L.R. (2), Premier Picotee; Miss Wood, L.RO. (2); J. B. Bryant, H.R.; Minnie, L.P.; Mary, L.P.; Zerlina, H.P.; Mrs. Dodwell, H.R.; Northern Star, L.RO.; and Mrs. Summers, H.P. 2nd, Mr. G. Thornley, with John Smith, H.R.; Miss Wood, L.RO.; Minnie, L.P.; Zerlina, H.P.; Nymph, L.P.; Ann Lord, L.P. (2); Miss Horner, H.RO. (2); Brunette, H.R.; Alice, M.P.; and Lucy, H.P. 3rd, no names. 4th, Mr. Bower. 5th, Mr. T. Mellor. 6th, Mr. J. Chadwick.

Class F. 6 *blooms, dissimilar.*—1st, Mr. J. Witham, with Zerlina, H.P., Thomas William, L.R., Alliance, H.R., Fanny Helen, H.RO., Minnie, L.P., J. B. Bryant, H.R. 2nd, S. Barlow, Esq., with Morna, H.R., Fanny Helen, H.R., Zerlina, H.P., Dr. Epps, H.R., Ann Lord, L.P., and Norfolk Beauty, H.P. 3rd, Mr. E. Pohlman. 4th, Mr. John Whittaker.

Class H. *Single blooms.—Heavy Red:* 1st, 2nd, and 4th, Mr. R. Lord, with John Smith. 3rd and 5th, Mr. T. Flowerday, with J. B. Bryant. 6th, Mr. G. Rudd, with J. B. Bryant.

Light Red: 1st and 3rd, Mr. T. Flowerday, with Thomas William. 2nd, 4th, 5th, and 6th, Mr. R. Lord, with the same.

Heavy Purple: 1st, Mr. R. Lord, with Zerlina. 2nd and 3rd, Mr. J. Beswick, with the same. 4th, Mr. E. Pohlman, with the same. 5th and 6th, Mr. J. Beswick, with Mrs. Summers.

Light Purple: 1st, Mr. T. Flowerday, with Mary; 2nd, with Minnie. 3rd, Mr. George Thornley, with Ann Lord. 4th, Mr. B. Simonite, with Mary. 5th, Mr. R. Lord, with Minnie. 6th, Mr. J. Beswick, with Ann Lord.

Heavy Rose: 1st and 5th, Mr. R. Lord, with Miss Horner; 2nd, with Fanny Helen. 3rd, Mr. J. Chadwick, with Edith Dombrain. 4th, Mr. Wm. Taylor, with Edith Dombrain. 6th, Mr. G. Rudd, with Edith Dombrain.

Light Rose: 1st, 2nd, and 4th, Mr. T. Flowerday, with Miss Wood. 3rd, Mr. J. Beswick, with Teresa. 5th, S. Barlow, Esq., with Teresa. 6th, Mr. Wm. Taylor, with a seedling.

The premier Picotee was Thomas William, L.R., exhibited by Mr. Robert Scott, Newcastle.

SELFS, FANCIES, &c.

Class I. 12 *blooms.*—1st, Mr. R. Lord. 2nd, S. Barlow, Esq.—E. S. D.

SUBURBAN GARDENING.

OCTOBER.—That which gardeners have anxiously looked for, namely, a fine, warm, and dry late summer and autumn, has already been realised in part. As we write, the weather is all that could be desired, and eminently favourable to gardening operations. Owing to the prolonged wet weather, gardening work generally had fallen into arrear, and there is yet much need for open weather to get important work executed.

Kitchen Garden.—The lifting of *Potato* crops is now a work of some importance. On the whole, there have been good crops of early Potatos, but main-crop and later varieties are thin in the yield, and much tainted with disease. Lifted Potatos are keeping badly. It is well to get up all crops fit for lifting, and when dry lay them out as thinly as possible in an open, cool place, and look over them occasionally. *Lettuce* and *Cauliflower* can be planted out in a warm situation in rich soil, to be covered with hand-glasses or cloches in bad weather. It is not in many suburban gardens that space can be afforded for these, but when it can be done both come in very handy in the winter and spring. *Root crops* are late, but if not already harvested, this work should be done without delay. *Celery* should be pushed on into growth as fast as possible, so as to be completely earthed up before bad weather sets in. Now is a good time to get the garden thoroughly cleaned over before winter. A fine autumn is the best time to do this. If time admits of its being done, any vacant plots of ground should be dug and thrown up roughly till wanted.

Fruit Garden.—The gathering of fruit is now a leading operation in the fruit garden. It should be done in dry weather, and the fruit carefully handled. *Morella Cherries* and *Plums* on walls, and *Red Currants* on walls or bushes, should be carefully covered up, for preserving from birds, &c., and be kept as dry as possible. *Strawberry-beds* should be well manured and slightly forked in fine weather; planting can be done at any time this month. Those who contemplate planting should endeavour to obtain trees with plenty of fibrous roots, as these soon take hold of the new soil, if at all favourable for planting. Any one planting should endeavour to find out what sorts do best in the locality, and certainly not attempt to plant in the open any sorts that require to be placed against walls. Cuttings of *Gooseberries* and *Currants* may be placed in a convenient piece of ground now. *Strawberries* may still be planted, but it is getting late, and *Raspberries* should be trimmed, cutting away all the old canes, and removing such young suckers as may not be required for next year's fruiting. Five or six canes are quite enough to leave on each stool. *Hardy* and *Orchard Fruit-trees* may be pruned towards the end of the month.

Flower Garden.—If fine weather characterises the month of October, many things will continue flowering all through it. The best thing the gardener can do is to keep the beds of the hardier plants as gay as possible; and with these, the lawn and grass walks. Any beds of tender plants can be cleared away and planted with *Bulbs* and *Spring-flowering Plants*. If the ground is poor, some rotten dung should be worked into it. It is best to clear away a bed, dung and dig it, plant it, and finish it off, before another bed is touched. *Calceolaria* cuttings can be put into a cold frame during the month, simply keeping the frost from them. *Shrubs* can be planted, and *Hedges* clipped. *Herbaceous Plants* can be propagated by division of the roots. *Hyacinths* can be put into pots and glasses. To have them in perfection in the former, they should have a rich compost —say, one-third loam, one-third rotten dung, and one-third leaf-mould and sand. *Tulips*, *Polyanthus Narcissi*, and *Crocuses* may be similarly planted. The pots should be plunged in leaf-mould, ashes, or spent tan, covering them over about six inches deep. In about six weeks they will be well rooted, and may be removed to the greenhouse.

Cold Frames.—These are now getting well filled with subjects for winter preservation. No time should be lost in dividing and potting hardy *Primulas* of all kinds, taking care not to overpot any. The pots should be well drained, and the soil made free by the addition of sand. All plants already potted should be gone over, the decaying leaves removed, the surface-soil stirred, and any worms that may have found a lodgment in the soil about the roots got rid of. If any plants have an unhealthy appearance, they should be turned out of pots, and if the soil has become soddened and sour, the plants should be repotted. As it is necessary to shut up the plants somewhat close in bad weather, green-fly will be certain to increase, and fumigation should be resorted to. Air should be given on all occasions when possible, the more freely the better in fine weather, and the plants will be benefited by an occasional warm shower being allowed to fall upon them.

Greenhouse.—Any plants, such as *Camellias*, *Azaleas*, *Acacias*, &c., which have been standing out during the summer, should now be housed under glass, but previous to removal, the drainage of the pots should be examined, and worms extracted from the soil, the pots also should be well cleansed and made tidy for the winter. *Liliums* that are going out of flower, and indeed anything of a hardy character, should be stood out of doors, for the foliage to ripen off, and then be placed

in a cold frame for the winter. Any good *Zonal Pelargonium* that it is desirable to propagate, and *Fuchsias* also, can be increased by putting cuttings in pots, placing them on the greenhouse shelf, and shading from the sun. *Chinese Primulas* should not be allowed to remain too long in a cold frame, as, while safe from frost, damp will do them harm, if cold, wet weather sets in. *Calceolarias* and *Cinerarias* will soon require to be housed also. *Chrysanthemums* should be got under glass in the early part of the month, giving them plenty of liquid manure, to assist the flowers coming on. If the plants are affected with fly, they should be cleaned of them before housing. Should any mildew appear in the leaves, they should be dusted with sulphur immediately, to prevent it from spreading. All plants will now require less water, the hard-wooded section especially; but they should be looked over daily with care, especially when the weather is warm and drying.—SUBURBANUS.

GARDEN GOSSIP.

THE event of the past few weeks has been the INTERNATIONAL EXHIBITION AT MANCHESTER, held in celebration of the jubilee of the opening of the gardens of the Botanical and Horticultural Society at Old Trafford. This show commenced on August 24th, and lasted four days. It was probably the greatest combined fruit and flower show ever held in this country, though its component parts may have been equalled on other occasions; and was altogether most creditable to the managerial skill of Mr. Bruce Findlay. The strong feature of the show was the exhibition of fruit; indeed the quantity of fruit exhibited was prodigious, and in the main of excellent quality. In the collections Mr. Coleman maintained his well-earned reputation with fruit of the highest quality and finish; and in the great Grape classes, Mr. Hunter was the winner. A magnificent fruiterer's display was made by Mr. Mason, of Manchester. The general quality in the fruit classes was much more even than is usual in collections of fruits, and the individual classes of Grapes, Peaches, Nectarines, Melons, Apples, Pears, &c., were all good. Plants were well shown for the season, but at so late a period one scarcely hopes to find such a brilliant array of specimen-plants as appeared in three groups of twenty flowering and fine-foliaged subjects, in which Messrs. Cole and Sons, Withington, took the lead. In this and other parts of the show there was no lack of flowers, while the foliage plants were well varied by the Dipladenias, the Lapagerias, the Ixoras, the Allamandas, the Franciscæas, the Heaths, and the considerable sprinkling of Orchids which were present, while the richly-tinted Crotons threw much bright colouring into the picture. The large, iron-framed annexe was filled by "effect" groups of plants, which formed an exceedingly interesting feature, one especially, in the 20 ft. by 10 ft. space, set up by Mr. Smith, gr. to J. Rylands, Esq., of Stretford, was remarkable for the good taste displayed in its arrangement. In this tent the various nurserymen made a good display, some of them not competing. Among the latter, the first place was due to the General Horticultural Co. (John Wills), Limited, who showed a magnificent group of Palms, Crotons, and Dracænas, young highly-coloured plants, well thrown up by a setting of Ferns. The group covered a large sloping bank at one end, and was most tastefully arranged. The show of the National Carnation and Picotee Society (North), though it was almost past the season for these flowers, was very creditable, and Roses, Dahlias, Gladioli, and other cut flowers were very good, considering the unfavourable weather. The Vegetable display was marvellous in quantity, and generally of splendid quality—the Potatos alone, having been crowded out of the tents into the open air, would have made a fine exhibition of themselves. In the garden structure and implement department there was a most varied and interesting display of exhibits. The weather, unfortunately, was not propitious; nevertheless, on the closing day, when the sun shone for a few hours, 14,000 visitors entered the gardens. The total number of visitors to the exhibition, notwithstanding this serious drawback, during the four days was 40,000, and this entry-money will be all to the good, as the subscriptions received will pay the expenses.

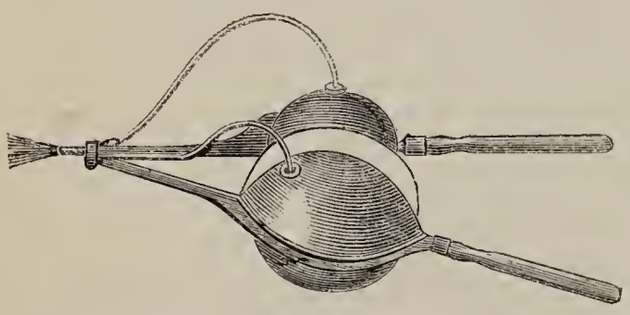
— FAILING health, we are sorry to find, compels Mr. E. S. DODWELL, the leader of the Carnation and Picotee fanciers, to exchange his suburban residence at Clapham, where the air is poisoned by the passing railway engines, for the purer and softer air of Oxford, whither he will shortly remove. The distribution of his surplus stock of Carnations and Picotees, including many remarkably fine seedlings, and also many seedlings yet unbloomed, raised from the most carefully hybridised seed, is therefore inevitable, and affords an opportunity for the acquisition of what would otherwise be less readily obtainable. The Southern branch of the National Auricula and the National Carnation and Picotee Societies will greatly miss his energetic management; but fortunately, the valuable aid of his co-secretary, Mr. James Douglas, will be devoted to the interests of these associations, and Mr. Dodwell will still render such aid as his health—may it be thoroughly re-established!—will permit. The occasion seems a fitting one for the presentation of a testimonial to Mr. Dodwell, in acknowledgment of what he has done in the improvement of the Carnation and Picotee, and in extending the cultivation of these popular flowers.

— WRITING in the *Gardeners' Chronicle*, Mr. Crossling states, in reference to the PROTECTION OF FIGS, that large Fig trees should be loosened from the walls, and the branches tied in bundles, packing them well with hay, straw, Fern, or whatever material is most readily obtainable. It is essential that whatever material is used for protection be dry, and if straw is used that it does not contain much corn, which will induce mice to take up their quarters there for the winter, and when the grain becomes exhausted they will play sad havoc with the bark of the larger branches. When the bundles are slung to the wall again, and well packed, mats may be fastened over all; they will keep the material dry, prevent the winds from disturbing it, and preserve a neat appearance generally. The most careful protection is unavailing in some seasons, as the embryo Figs get destroyed by severe early autumnal frosts, while the points are yet full of sap. And sometimes even the care taken to preserve them has an injurious effect, when, owing to its shelter, the young Figs become too forward in spring, and are caught by late frosts. However, all things considered, it is better to cover up during the winter, and when this is done at all, it ought to be done effectually.

— Messrs. Veitch have this season exhibited magnificent specimens of Cockscomb. One, measuring 2 ft. 9 in. from tip to tip, and 18½ in. in its greatest breadth, of the colour and texture of crimson-plush, was the finest specimen we have seen.

— Of George Fergusson Wilson, F.R.S., of Weybridge, a very exeellent likeness is published in the September number of *Colburn's New Monthly Magazine*. The portrait is accompanied by an appreciative sketch of Mr. Wilson's career, which, while passing over much of his zealous horticultural work, touches on other interesting points, and will no donbt be read with interest by all who know of his devotion to these pursuits, and the success he has achieved in the cultivation of many choice and difficult plants, but of Lilies especially, as well as in the profitable management of orchard-house trees.

— A very handy little instrument, Wells' Spray Distributor, has been sent to us by Mr. Wells, Earlswood Nursery, Redhill. The instrument is very simple in construction and very efficient in use. It is intended for the dispersion in the form of a light spray of any liquid insecticide,



and consists of two arms working like a pair of shears from a pivot near the nozzle, one arm being furnished with a reservoir for the insecticide, and the other with an india-rubber ball. By pressing the two together, which is done with perfect ease by bringing the two arms together, a fine spray is produced in the most effectual manner, and is continued by opening and shutting the arms or handles.

— Mrs. Stephens, of Frogmore, Ilminster, has sent us flowers of a strain of Sweet-william which she eultivates, and whieh are very pretty and varied in character; they are chiefly of the light-coloured types, more or less heavily marked with crimson, and various shades of purple and rosy-purple. Some of the flowers are quite the size of a shilling. The batch includes one pure white variety. The quality of the flowers is very good, though perhaps not equal, from the florist's point of view, to that known as Hunt's strain, but the marginal indentation is by no means excessive. Mrs. Stephens, we may add, is the proprietor of a Plant Manure, which we have found beneficial to flowering annuals, such as double stocks, &c., which have been greatly improved thereby.

— Of Mr. Fish's Manuals on Fruit-culture, reprinted from the *Bazaar*, those on the Cherry, Medlar, Fig, Mulberry, and Quince have been recently issued; also, the fourth part of Bulbs and Bulb-culture. These little manuals contain very full information on the subjects to which they are devoted, and will be useful to a numerous class of readers.

— Of garden books on our table, one entitled "Garden Pests and their Eradication" (London: Gill), is a useful little manual, in which all the more common insects and other small garden pests are described, in most cases figured, and the best means of preventing or diminishing the force of their attacks are pointed out. It is just the sort of book one would refer to in emergency, when, for example, as lately, caterpillars of different kinds were devouring every green thing.

In Memoriam.

— Madame Van Houtte, widow of the late Louis Van Houtte, of Ghent, died on August 18th. Those familiar with the great Belgian nursery, founded and presided over by Van Houtte, will know how greatly the success of this vast establishment was due to the energy and unflagging perseverance in detail which Madame Van Houtte brought to bear in aid of her husband, and, since his decease, of her son. Her funeral was marked by the spontaneous expression of sympathy which was manifested by the numerous *employés* of the establishment, many of whom have grown grey in the service, and also by the presence of representatives of more than 100 other establishments of like nature in the old Flemish capital.

— Mr. W. Bunney, for the last sixteen years gardener to W. H. Campion, Esq., Danny Park, Hurstpierpoint, Sussex, died on August 27th, at the age of 72. Mr. Bunney, who was one of the first exhibitors at the Brighton Horticultural Society's shows, and for more than twenty years a judge at the Royal Botanic Society's shows at Regent's Park, was well known to a wide circle of gardeners and nurserymen, by whom he was much respected.

— Mr. Charles Lee, of the Royal Vineyard Nursery, Hammersmith, and Croxteth House, Hounslow, senior partner of the firm of Lee and Son, died suddenly on September 2nd, in his 74th year. Mr. C. Lee, who was born at the Hammersmith Nursery, on February 6th, 1808, was the representative of one of the oldest, best known, and most extensive nursery establishments in the kingdom, and ranked amongst the most accomplished of nursery managers. He had a specially extensive knowledge of hardy ornamental trees and shrubs, and the branch establishments at Isleworth and Feltham were devoted to this important and interesting class of plants. He was also President of the London Seed Trade Association. His loss will be deeply felt alike by sorrowing friends, and business acquaintances.

— William Edgcumbe Rendle, Esq., of Westminster (formerly of Plymouth), died on September 3rd at Eastbourne, after a long and severe illness. He was born at Compton Giffard, near Plymouth, on February 10th, 1820; and was the originator of the Tank system of heating horticultural buildings, and patentee and inventor of what is known as Rendle's Patent Glazing, which is largely adopted for horticultural buildings, and also by her Majesty's Government and all the leading railways; his latest and largest work being the Great Citadel Station, at Carlisle.

W. H. Fitch, del.

Chromo. P. Stroobant, Chent

Aruncus astilboides

ARUNCUS ASTILBOIDES.

[Plate 549.]

THIS extremely elegant, hardy herbaceous plant is a native of Japan, where it is found in the high mountains of the province of Nambu, in the northern parts of the island of Nippon. It was introduced by Mr. W. Bull, of Chelsea, and was exhibited by him at the Royal Botanic Society's Exhibition in May, 1879, and was there Certificated under the name of *Spiræa nivosa*. On subsequent examination, however, it proved to be the *Spiræa Aruncus* var. *astilboides* of Maximowicz, and under this name it gained a First-class Certificate at the exhibition of the Royal Horticultural Society in June, 1880. More recently, Maximowicz has separated *Aruncus* as a distinct genus, and gives to the old *Spiræa Aruncus* the name of *Aruncus sylvester*, while to our present subject he applies that of *Aruncus astilboides*. Doubtless, the name of *Spiræa astilboides*, under which it is noticed and illustrated in the *Gardeners' Chronicle* (N.S., xiv., 113, 114), will cling to it in gardens, and that it will become popular amongst cultivators is certain, since it is, if possible, more telling than the now ubiquitous *Astilbe japonica*, to which it bears a certain degree of resemblance.

Aruncus astilboides is a free-growing herbaceous perennal, quite hardy, having something of the general features of *A. sylvester* (*S. Aruncus*), but considerably dwarfer in stature, and more slender and graceful in character. It grows from two to three feet high, and is furnished with ternately bipinnate leaves, the leaflets of which are toothed, the terminal ones being larger, ovate acuminate, and the lateral ones smaller and rounder. The plumy white inflorescence forms a twice-branched spicate panicle, and is very showy and attractive. It will thus be evident that the new introduction is a smaller and more refined form of the grand old plant hitherto known as *Spiræa Aruncus*, and to which the specific name of *astilboides* is evidently given on account of its general resemblance to *Astilbe japonica* (alias *Spiræa* and *Hoteia*), which it somewhat exceeds in size and vigour, and rivals, if, indeed, it does not excel, in the feathery elegance of its white inflorescence.—T. Moore.

THE HEREFORDSHIRE POMONA.

WE have the pleasure of welcoming a new part (Part IV.) of the above-named splendidly illustrated work on British-grown Apples and Pears, which Dr. Hogg is editing for the Woolhope Club. We have already referred to the high character of the publication, and offered the thanks of the community to those engaged in its production; and we have, as was our duty, complimented the members of the Club on the public spirit they have displayed in producing so fine a series of illustrations, which might have waited long to have seen the light had their issue been left to private enterprise. Thus our congratulations complete the cycle—the Club and the editor each, respectively, receiving their quota, for the public spirit which has been manifested, and the skilful definitions and historical notes recorded, while the public are equally to be congratulated on having such a first-class work on so interesting a subject made accessible to them.

Like its predecessors, the present part consists, firstly, of a portion of what is intended as an introductory section of the completed volume, in this case chiefly relating to the making of Cider and Perry; and secondly, of a series of coloured plates, with descriptions of the varieties figured. There are six plates of Apples, in which are given representations of twenty-one varieties of dessert and culinary sorts, and eight varieties of Cider fruit; and six plates of Pears, comprising figures of thirty-five varieties, including seven Perry pears—the illustrations being produced in M. Severeyns' best style of chromo-lithography, from drawings made chiefly by Miss Edith Bull and Miss Alice B. Ellis. The fruits represented in the present part are :—

Apples.—Borovitsky or Duchess of Oldenburgh (*F. & P.*, 1881, t. 544), College Apple, D'Arcy Spice, Early Nonpareil, French Codlin, Herefordshire Beefing, Jolly Beggar (*F. & P.*, 1878, t. 462), Norfolk Beefing, Oslin (*F. & P.*, 1879, t. 486), Old English Codlin, Pitmaston Russet, Red Astrachan, Ribston Pippin, Royal Codlin, Royal Russet, Sack and Sugar, Striped Beefing, Sturmer Pippin, Transparent Codlin, Wheeler's Russet, Whorle Pippin; and of *Cider Apples:* Bromley, Cider Lady's Finger, Eggleton Styre, Gennet Moyle, Red Royal, Skyrme's Kernel, Styre Wilding, and White Styre.

Pears.—Alexandrine Douillard, Ambrosia, Aston Town, Auguste Jurie (*F. & P.*, 1877, t. 447; 1878, p. 153), Beurré Blanc des Capucines, B. Bosc, B. Clairgeau (*F. & P.*, 1867, t. 269), B. d'Anjou (*F. & P.*, 1866, t. 255), B. Giffard (*F. & P.*, 1879, t. 484), B. Six, Brown Beurré, Délices d'Hardenpont, Duchesse d'Orléans, Durondeau, Fondante d'Automne, Emile d'Heyst, Hessle, Jargonelle, Passe Colmar, Sanguinole, Seckle, Souvenir du Congrès (*F. & P.*, 1875, t. 390), Summer Beurré d'Aremberg, Summer Doyenné (*F. & P.*, 1862, t. 196), Swan's Egg, Susette de Bavay, Tardivo de Mons, Thompson's; and of *Perry Pears:* Chaseley

Green, Holmer, Moorcroft, Oldfield, Taynton Squash, Thurston's Red, and White Squash.

The following interesting particulars accompany the figure of Herefordshire Beefing :—"Nothing is known of the origin of this Apple. Dr. Hogg first saw it at the Apple Show of the Woolhope Naturalists' Field Club, held at Hereford, in 1876. It was then named simply Beefing, to distinguish it from the Norfolk Beefing. Dr. Hogg called it the Herefordshire Beefing, a name which was adopted by the pomological committee of the Club. Some months afterwards, when referring to some pomological MSS. which belonged to Forsyth, the author of a *Treatise on Fruit Trees*, Dr. Hogg found amongst them a record of a collection of fruits that had been sent to him in the year 1801, by a Mr. Stroud from Dorsetshire, and of these one was 'the Hereford Beefin, a flat apple, of a brownish-red with some yellow on the side from the sun. This is very different from the Norfolk Beefing—keeps till the end of April.' Dr. Hogg's nomenclature was thus long anticipated, and this opportunity of mentioning the circumstance is taken, because there is no record of the Hereford Beefin to be found in the *Treatise on Fruit Trees;* nor, indeed, is any mention to be found of it elsewhere. It is now therefore described and figured for the first time.

"*Description.*—Fruit : roundish oblate, even in its outline. Skin : almost entirely of a dark chestnut-colour, veined and dotted all over with cinnamon-coloured russet, but especially over the crown and round the stalk, where it spreads over the base in ramifications; on the shaded side it is orange with a greenish tinge. Eye : rather large, set in a rather deep, round plaited basin, with convergent segments which are also sometimes erect; tube funnel-shaped; stamens basal. Stalk : stout and straight, set in a round cavity. Flesh : yellowish, very firm and solid, crisp, very juicy, and with a brisk but not harsh acidity. Cells of the core closed.

"This is an excellent culinary apple, and in season from December to April or May. It has also the very valuable property of drying well in the oven, like the Norfolk Beefing, for which purpose it would well repay extensive cultivation.

"The tree grows to a medium size, and is very hardy. It is so prolific, that in the miserable seasons of 1879 and 1880, the Herefordshire Beefing trees were conspicuous for their crops of fruit, whilst all the surrounding trees in the orchard were barren."

The faithful illustrations given in this book are such as to make it a most useful and valuable addition to every garden library, and we trust it may continue to meet with liberal support from the class whom its issue more immediately concerns.—T. M.

VINES AND VINE CULTURE.

Chap. XVIII.—The Varieties of Grapes.

(Continued.)

THE descriptions of the varieties of Grapes included in our Synoptical Table are here continued, from page 148 :—

Malvoisie Noire.—A synonym of Œillade Noire : which see.

Meurthe Frontignan (52).—A round black Muscat Grape. *Synonym :* Muscat Noir de Meurthe.

Vine.—Moderately vigorous in growth, the shoots ripening freely ; of free-fruiting habit. *Leaves* small, rounded, not deeply lobed, but deeply toothed ; dying off reddish.

Fruit.—Bunches medium-sized, cylindrical, sometimes slightly shouldered, very close and compact, well set. *Berries* medium-sized, larger than those of the Black Frontignan, round, on short thick fleshy stalks. *Skin* purplish-black, covered with a heavy bloom, and with a very prominent style-point. *Flesh* firm, crackling, rich, brisk, and juicy, with a very distinct Muscat flavour.

History, &c.—Grown in the collection of the Royal Horticultural Society at Chiswick, having been received from M. Leroy, of Angers.

Cultural Notes.—Will succeed under ordinary treatment, or in a cool house.

Season.—Mid-season or general crop.

Merits.—Quality excellent ; one of the best of its class.

Mihaud du Pradel.—A synonym of Œillade Noire : which see.

Miller's Burgundy (10).—A round black Sweetwater Grape. *Synonym :* Miller Grape.

Vine.—Strong and vigorous in growth, the young shoots ripening freely, very fruitful, producing three to four bunches on each shoot. *Leaves* thick and leathery, very downy, the young leaves and shoots being almost white : hence called the Miller Grape.

Fruit.—Bunches small, short, compact, very thickly and freely set. *Berries* small, roundish. *Skin* thin, purplish-black, covered with a fine bloom. *Flesh* dark, juicy, with a sweet pleasant flavour.

History, &c.—One of the very oldest of Grapes cultivated in this country, and still to be met with against walls and cottages, as an out-door vine.

Cultural Notes.—Suitable for planting against a warm wall, where, in good seasons, it ripens freely.

Season.—Early.

Merits.—Third-rate.

Mill-Hill Hamburgh (11).—A round black Sweetwater Grape. *Synonyms :* Champion Hamburgh, Black Champion.

Vine.—Growth very strong and gross, the young shoots soft and thick, and frequently not ripening well, so that the vine often becomes bare; not very free-bearing. *Leaves* very large, pale green, and very early assuming a flabby, flaccid, sickly yellow appearance, as if the vine were out of health, which is a very distinctive characteristic of this variety.

Fruit.—Bunches medium-sized, never very large, broadly shouldered, the stalk very thick and fleshy; rather thinly and often indifferently set. *Berries* very large, quite round. *Skin* thin almost transparent, reddish-black, seldom quite black, with

a thin bloom. *Flesh* very tender, melting, juicy, sweet, rich, and pleasantly-flavoured; quite superior to the Black Hamburgh.

History, &c.—I have failed to trace the direct origin or history of this noble Grape. It has been in cultivation in various gardens for many years, and is confused with the Dutch Hamburgh, a coarse, hard-fleshed variety, the one passing for the other very frequently.

Cultural Notes, &c.—Requires much the same treatment as the Black Hamburgh in regard to temperature, &c., but fruits best on the long-rod system. The skin being very thin, the berries do not keep long after ripening.

Season.—General crop; not adapted for forcing early, or for late keeping.

Merits.—First-class as to size and quality.

MRS. PEARSON (66).—A round white Muscat Grape.

Vine.—Very strong and vigorous in growth, the wood ripening freely; fruitful. *Leaves* medium-sized, thick, and leathery, deeply-lobed and toothed, with reddish petioles and venation dying off yellow.

Fruit.—*Bunches* large, long, tapering, on very strong foot-stalks; freely set. *Berries* roundish, or nearly so. *Skin* thick or leathery, deep-green, assuming an amber tinge when quite ripe. *Flesh* thick or firm, juicy, sweet, and with a strong Muscat flavour, very pleasant.

History, &c.—Raised by Mr. Pearson from Black Alicante crossed with Ferdinand de Lesseps, and awarded a first-class certificate by the Royal Horticultural Society in 1874. It has not come into very general cultivation.

Cultural Notes.—Requires fully more heat and a much longer time to ripen its fruit than the Muscat of Alexandria. It should be grown in an early house.

Season.—Late—late in ripening, hangs late, and keeps well.

Merits.—Quality first-class, but requires too much time to ripen.

MRS. PINCE (45).—An oval black Muscat Grape. *Synonym:* Mrs. Pince's Black Muscat.

Vine.—Growth very strong and vigorous, the shoots ripening well; moderately fruitful. *Leaves* strong and leathery, very rugose, with reddish stalks and venation, and covered with down.

Fruit.—*Bunches* generally very large, long, tapering, and often terminating in a broad forked or fasciated point; close and compact, but requiring care in setting. *Berries* large, long, ovate, on very stout warted stalks. *Skin* tough, thick, deep-purplish black, with a very thick blue bloom. *Flesh* firm, crackling, very rich and sweet, with a strong Muscat flavour.

History, &c.—The seed of this grape was sown by the late Mrs. Pince, of the Exeter Nurseries, shortly before her death. The vine fruited in 1863, and the fruit was awarded a First-class Certificate by the Royal Horticultural Society. It is now pretty generally cultivated, more especially, perhaps, in the south-western counties, one of the first and most successful cultivators having been Mr. Meredith, of Garston.

Cultural Notes.—Requires treatment very similar to that of the Muscat of Alexandria to have it thoroughly good. It takes a long time to ripen thoroughly, but will keep long in condition, and with less care than almost any other Grape.

Season.—Late.

Merits.—First-class, especially valuable for late keeping.

MOROCCO.—A synonym of Black Morocco: which see.

MOROCCO PRINCE (78).—An oval black Vinous Grape.

Vine.—Very strong and vigorous in growth, the shoots ripening freely; moderately fruitful. *Leaves* medium-sized, deeply toothed, rugose, with reddish stalks and venation; dying off yellow.

Fruit.—*Bunches* of medium size, on long, strong foot-stalks, with strong shoulders, setting freely. *Berries* medium-sized, short-ovate, on strong foot-stalks. *Skin* thin, membraneous, generally of purplish-red colour, but sometimes black, and with a thin bloom. *Flesh* firm, juicy, sweet, with a very brisk, sparkling vinous flavour.

History, &c.—Received by the Royal Horticultural Society about 25 years ago, as a seedling between Black Prince and Black Morocco—hence called Morocco Prince.

Cultural Notes.—Succeeds under the same treatment as the Black Hamburgh.

Season.—Late.

Merits.—Second-rate; valuable on account of its good keeping qualities.

MUSCAT OF ALEXANDRIA (57).—An oval white Muscat Grape. *Synonyms:* Charlesworth Tokay, Cabas à la Reine, Muscat Escholata, Bowood Muscat, Lunel Muscat, Muscat Romain, Passe Muscat, Tottenham Park Muscat, Tynninghame Muscat, Archerfield Early Muscat, &c.

Vine.—Strong and robust in growth and of a vigorous healthy constitution, very free-fruiting, the young shoots moderately strong. *Leaves* of medium size, deeply lobed, somewhat rugose, the leaf-stalk and venation reddish.

Fruit.—*Bunches* very long, tapering from 12 in. to 20 in., and often strongly shouldered; weight from 2 lb. to 4 lb., and frequently 6 lb. A somewhat shy setter. *Berries* very large, long-ovate, on stout stalks. *Skin* clear, rather thick, greenish-yellow, or when highly ripened, pale amber, and sometimes with a flush of cinnamon where much exposed; very handsome. *Flesh* firm, crackling or fleshy, exceedingly sweet, rich, and with a strong Muscat flavour.

History, &c.—One of the oldest and still the very best of grapes, and one common to almost every garden. The number of synonyms applied to this grape, and the number of new, early, hardy, and so-called improved varieties that have been introduced are, perhaps, greater than in the case of any other grape. In the North of England, it used very commonly to be called Charlesworth Tokay; for many years, Bowood Muscat was considered a greatly-improved variety; and Muscat Escholata had the reputation of being much larger, but a complete test of all these reputed varieties being made at Chiswick, the only distinct variety proved to be the Canon-Hall Muscat. One of the largest vines is that at Harewood House, Leeds, which was planted by Mr. Chapman in 1783, and now completely fills a house 60 ft. long by 18 ft. wide, and bears an average crop of 300 bunches. Amongst the best cultivators of this grape may be named Messrs. Lane, of Berkhamstead; Mr. Johnstone, of Glamis Castle, Forfar; and the late Mr. Drewett, of the Denbies, Dorking.

Cultural Notes.—No grape better rewards special culture than this. It is seldom found to succeed well in a mixed collection. Although the vine is quite hardy, and fruits freely in the open air, it is found to require a warmer temperature and drier atmosphere than most other varieties to

set the berries properly. Thus special care is required in setting, and a higher temperature is also requisite, to ripen the fruit thoroughly. Unlike black grapes, the Muscat of Alexandria is much benefited by leaving the fruit exposed to the direct influence of the sun.

Season.—Late; will keep in good condition until late in spring.

Merits.—First-class. The most handsome and highest-flavoured grape in cultivation.

MUSCAT BIFÈRE (58).—An oval white Muscat Grape.

Vine.—Moderately robust in growth, and with a good constitution; fruits freely. *Leaves* medium-sized, roundish.

Fruit.—*Bunches* long, tapering, with broad shoulders; freely set. *Berries* medium-sized, roundish-oval. *Skin* clear; pale yellowish-green. *Flesh* firm, juicy, sweet, and with a very decided Muscat flavour.

History, &c.—Received from M. André Leroy, of Angers, and fruited at Chiswick.

Cultural Notes.—Will succeed in any ordinary vinery.

Season.—Early.

Merits.—Second-rate.

MUSCAT BLANC.—A synonym of White Frontignan: which see.

MUSCAT CHAMPION (73).—A round, red, or grizzly Muscat Grape. *Synonym:* Champion Hamburgh Muscat.

Vine.—*Growth* somewhat gross and strong, the shoots often ripening badly, like those of the Mill-Hill Hamburgh; shy-fruiting. *Leaves* large, much toothed, very flabby, dying off yellow.

Fruit.—*Bunches* medium-sized, broadly shouldered, on very thick gross or fleshy stalks; an imperfect setter, many of the berries, although attaining a fair size, having no seeds. *Berries* very large, round. *Skin* thin, tender, of a dark-reddish or grizzly colour, seldom black. *Flesh* melting, very juicy, very rich and sweet, with a strong Muscat flavour. A noble and handsome grape.

History.—Raised by Mr. Melville, gardener to the Earl of Rosebery, at Dalmeny Park, Edinburgh, about the year 1858, by crossing Mill-Hill Hamburgh with Canon-Hall Muscat. It possesses the characteristics of both parents. It was sent out by Messrs. Veitch and Sons.

Cultural Notes.—A somewhat difficult grape to cultivate, being slow in commencing to grow, and producing gross, badly-ripened wood. At Sandringham, Mr. Carmichael was particularly successful in its cultivation; and Mr. Harrison Weir grows it with great success, in his low ground-vineries at Brenchley, Kent.

Season.—Mid-season; will not keep long after being ripe.

Merits.—First-class in quality, and very handsome. —A. F. BARRON.

CARNATION NOTES, 1881.

1. I HAVE found it not at all uncommon in past years, and of decidedly frequent occurrence this year, for Carnation seedlings to throw up a tree habit, and flower the same year. Out of a batch of seedlings from Messrs. Sutton and Son's Grenadin Carnation seed, no less than five have performed this freak, and come into flower in a decidedly perpetual manner—*i.e.*, keep throwing up one flower after another—so that I expect to have them in bloom in the house all through the winter months. It is very convenient and agreeable to such an impatient florist as I fear I am, to know what my seed is going to do the first year. The school of Carnation growers will, I am afraid, pass a vote of censure on me for growing such things at all; but I like to experimentalise, apart from the florist section.

2. Out of another batch of unorthodox French seed, I have had two remarkably fine instances of what I heard described, on July 19th by Mr. Moore, as the "Wheat-ear" Carnation. This is not pretty, but it is most quaint, being a sort of hardening of a succession of imbricated calyces about 1 in. long. I am curious to see whether this will remain constant.

3. From the same packet of seed I had a cream-ground fancy, which ran up so fast and lanky that I planted it at the foot of a wire arch, and grew it up as a climber. It has succeeded wonderfully, being still in flower, and about five feet high, straggling all over the trellis-work. It is most ornamental, and I shall certainly encourage its soaring aspirations.

4. I obtained some seed from a yellow fancy, from the Tyrol, two years ago, and have obtained a bloom which, to my mind, is a decided improvement on most of our yellow grounds. It is a perfect rose-flake yellow-ground Carnation, good in form and substance, smooth at the edge, the colour in good, bold flakes. Mr. Dodwell, who alternately rather chaffs and encourages his volatile pupil, tells me he fears I shall not be able to keep it through the year; but I shall have a good try, and if I succeed, shall see what the judges at the show think of it next year. When the layers are ready, I shall send a pair to Mr. Turner, and if he approves of it at the blooming season, why, I shall be considerably pleased with myself.

5. And lastly, I was considerably surprised at the beginning of the year by a curious instance of tenacity of life in Carnation pipings. By the courtesy of Mr. James Taplin, of Maywood, New Jersey, U.S.A., I obtained cuttings of half-a-dozen beautiful sorts of Tree Carnations. They reached me (beautifully packed) by post,

after a voyage of seventeen days. I, being busy at the time, forgot them for another fortnight, after which I took them out, parched indeed, and cut off the tips, and struck them in the ordinary manner in a box in a warm frame. They all struck in two weeks; I only lost four, out of four and a half dozen. They have been in flower ever since early June, and it seems to me a most interesting experience.—EDWARD H. ALLEN, F.R.H.S., *St. John's, Putney Hill, S.W.**

MUSHROOMS.

OF all the plants we cultivate, whether for use or ornament, there are none so mysterious as the Mushroom, for whilst other plants require light and air, this grows in the dark, and needs no ventilation. Moreover, in an ordinary Mushroom house of the Oldacre type, with shelves, the Mushrooms may be seen growing head downwards, as well as heads up. But the strangest part of the culture of this plant consists in its having no apparent roots, at least none at all equal to the task of yielding a crop of Mushrooms. A mouldy medium of loam and stable-dung is all the available earthy bed required for the crop. The smell of the Mushroom itself is one of the safest guides to its culture, in order to determine those which are eatable from those which are not. Here I would remark that house Mushrooms, as a rule, are always safe, whereas those from the meadows may be of various kinds, requiring skilful overhauling to ensure safety. Agarics abound about decaying wood, and should never be trusted in unskilful hands, bearing in mind the ravages of the dry-rot, which, mean and contemptible though it be, is able to bring down beams of oak, and render them brittle as a carrot, and that, too, in a very short space of time. Some Agarics have been known to raise the flagstones in the street. It is little less than a miracle to see the soft tissues of a Mushroom mastering the mason-work, to get room to expand; but where, I would ask, does this bulk of Agaric come from, for it has nothing under-ground to supply materials such as we see in turnips, parsnips, potatos, &c. When we dig up a "Fairy Ring," we find a few white threads, and this is all the bank of earth that the Agaric had to draw upon. Salt has the peculiar characteristic of taking the damp or dryness, just as the weather changes; and this is just the way that Agarics do best, whether for good or evil, and so we have in salt something not unlike manure for Mushrooms.

I should have stated that Mushrooms require no water, like other plants, but succeed admirably in a house full of steam; and when well managed, this is by far the best way to grow them, since they come clean and white, and as close as one can stand beside another; and whether as buttons to bottle, or larger specimens to stew, they are under control. The fairy ring illustrates the growth of these Agarics, showing exactly where spawn has been running, and where, under favourable circumstances, Mushrooms may be found. The Mushroom is not the plant, but the fruit of the mouldy spawn that pervades the maiden loam in the meadow, just as the dry-rot pervades the timber, and of the fairy rings, all that can be seen is a few white threads. This, indeed, is all that the botanist can exhibit, for, barring the fruit of the agaric, they have no place, for they come in a night, as if they were some modern manna sent to feed the poor and the destitute, direct from Heaven. If roast-beef be excellent—and no one doubts it—mushrooms well cooked are still more savoury, and always tender.

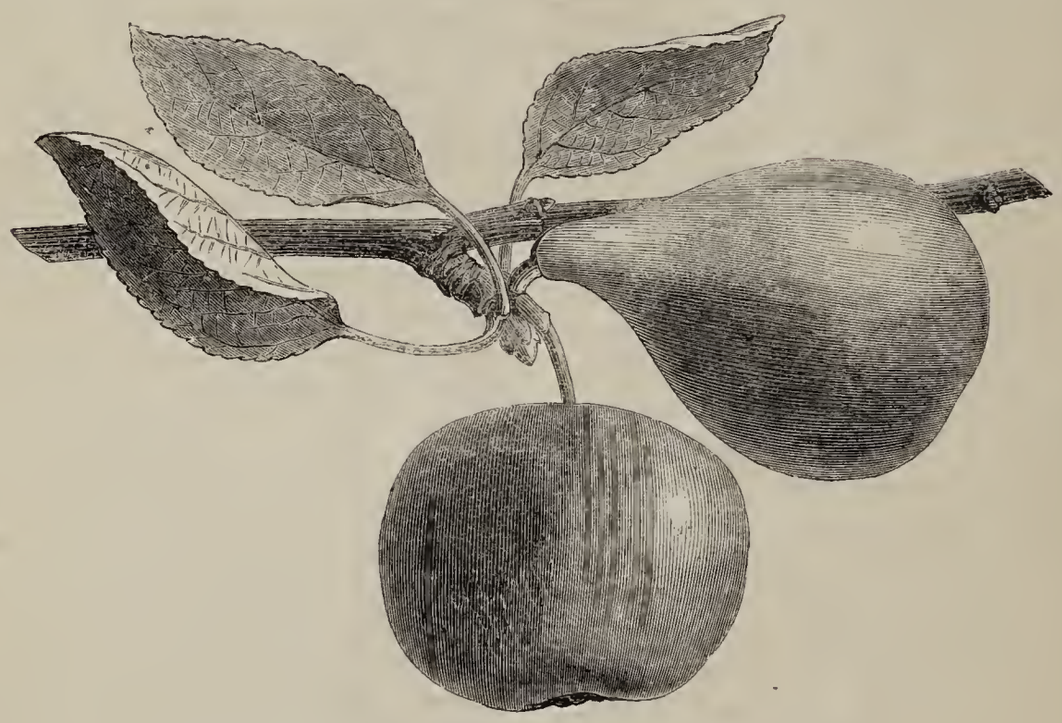
When Mushrooms are gathered, they should be kept the right side up, which is as they grow, in order to keep the sand and earth from getting to the gills, where washing could be of no service. Where meadows have been salted to kill the moss, it has sometimes killed the grass as well, and the effect has been a heavy crop of mushrooms, generated, no doubt, from latent spawn enlivened by the salt, and by the damp state which the salt would maintain.

I have been asked why people do not grow a crop of mushrooms in their cellars; but it is never desirable to have manure blue-moulded in one's house, or in any part of it, though there are sheds and idle pens for cattle that might well serve for growing mushrooms. For this purpose, stable-dung should be prepared by fermenting and repeatedly turning it until it looks blue, and is what gardeners call "burnt," and the maiden loam required should

* We shall be glad to hear what the Cingalese Carnation seed produces.—ED.

be damp, but not wet, for wet and dry are both wrong.

I cannot enter now upon the subject of the poisonous Mushrooms, but advise eating only the sweet-smelling ones with salmon-coloured gills, and shunning all those which come from decayed wood, or, indeed, wood of any kind, and those others that seem decked out in uniform. The puff-ball is safe and easily known when young, and by its ball of dust when old. The good old plan of growing Mushrooms in the kitchen-garden was to insert some spawn in the Melon-frame after the Melons were ripe, and I have seen fine Mushrooms growing out at top, sides, and bottom; and now that all the world is star-gazing, and taken up with science, gardeners would do well to study the science that helps to fill the pot.—ALEX. FORSYTH.



HETEROMORPHOUS APPLE TREE.

IN the *Revue Horticole* (1881, 54, figs. 16-20), M. Carrière has published an account, illustrated by figures, of which the accompanying is the most striking, of a case in which an apple-tree had produced at the same time fruits of normal form, and others which resembled those of the pear. The tree also bore fruits intermediate in form.

This phenomenon, we learn, was produced in an orchard belonging to M. Méril, of Déville, near Rouen. It was first observed in 1878, and again in 1880; on the latter occasion, by a mower who was cutting the grass, and who, having stopped under the tree, was surprised to see on it fruits so distinct in form.

The diverse fruits were found intermingled on the branches in the proportion of four or five apples of normal form, to one of those recalling a pear. The origin of this singular variety appears to be involved in obscurity. M. Carrière, however, remarks that it is only the shape of the fruit which is affected, for its character and flavour are those of an apple, and do not resemble those of the pear. This, M. Carrière observes, seems to exclude the hypothesis of fertilisation by a pear-flower, which certain persons would adopt; and his opinion is that the tree proceeds from a natural seed, and has always borne fruits thus differing in form, but which have been hitherto overlooked. As it was growing in an orchard with many others, the fruit of which was all destined to the production of cider, it is probable that the pyriform fruits of this tree, always restricted in number, have passed unperceived among the very large quantity of others. The tree which has borne these curious diverse fruits is about forty years old.—M.

ARCHDEACON LEA'S FRUIT-TREES.

I OBSERVE that the omission of the word "not," at p. 146, in the seventh line of my brief notice of these fine-fruiting trees, would lead one to suppose that root-

pruning is an institution at St. Peter's, Droitwitch. It is only where such has been required that the practice of root-lifting or pruning them has been adopted. Where the trees do well without manipulation of this kind, and have a fair amount of room to extend their growth, the practice is avoided, encouragement from the surface being preferred. When there is good, healthy fibre within reach of solar heat, and equal attention in other respects is given, healthy, clean-skinned, fruit-bearing trees are certain. Where soil naturally suits such conditions, we have always considered it unwise to waste labour, and maybe do mischief, by the use of knife or saw in cutting away what would be a real benefit to the trees. The cordons at St. Peter's I do not suppose have had any root-cutting; and restriction practised judiciously with the top-growth of these, is depended on more than any underground work.

The same may be said of Dr. Roden's handsome pyramids at Kidderminster, where pinching is a practice strictly adhered to, and top-growth restricted. I am told they have—as often before—carried splendid crops this year. We never had better Pears than this season, when the knife has hardly been used.—M. Temple, *Impney*.

THE GARDENIA.

WHO does not love the Gardenia? Its purity and fragrance, its adaptability to any and every purpose for which flowers can be used, at once make the Gardenia a universal favourite. In our young days, this plant was grown only in pots, kept in the greenhouse all the winter, and introduced into heat in the spring, when it yielded a crop of blossoms, and there the matter ended till the next spring. Of late years, however, in many places, the planting-out plan has been adopted, and right well does the Gardenia repay one for the trouble and house-room. Some three or four years ago, we had occasion to do away with the pines in one of the houses here. I thought this a favourable opportunity to fill the bed with turfy peat and sand, and in this bed I planted out *G. Fortunei*, *G. intermedia*, and *G. radicans major*; they grew and flowered admirably, and every year since have improved. I am unwilling to set down anything like the number we gather in a season, for it is simply incredible; every day, for nine or ten months in the year, there are plenty to cut. It is the favourite house in the garden. Still we gather, and still they come; even this very week (October 14th) we have gathered over sixty blossoms—fine, large, fat fellows, some of the flowers of *G. Fortunei* being as large as a small Camellia. I dose the plants well with liquid manure.

We all know what a dreadful pest the mealy-bug is among this class of plants, but a can of soft water (four gallons) and a wine-glass of paraffine, mixed, and *kept mixed*, while syringing, keeps the bug and scale down, so that the old way of sponging is entirely dispensed with. I may mention that there is a fine plant of *Stephanotis* also planted out in the bed and trained over the roof, which also gives us heaps of blossom, and the partial shade proves to be beneficial.—J. Rust, *Eridge Castle*.

VANDA CŒRULEA.

THIS fine Vanda is so little seen in collections even where Orchids are extensively cultivated, that I am induced to offer these remarks on its cultivation, from having grown and bloomed it successfully for several years, having had as many as fifty-four expanded blooms on a plant at one time. I believe, from my own experience, it is generally subjected to too high a temperature. The usual way of potting Vandas is this:—About five-sixths of the pot is filled with broken crocks, and on the top of this a mixture of sphagnum, crocks, and charcoal is placed, so as to form a depressed cone around the stem of the plant. February is a good time for this operation. As soon as this is done, the plant should be placed in an ordinary stove temperature, or in an early vinery, and syringed morning and afternoon. In the course of two or three weeks, new roots will begin to make their appearance. The same treatment must be continued until the end of June, when the plant should be subjected to a drier atmosphere, with a constant circulation of air night and day—in fact, treated in the manner a vinery is treated at that time of year, to keep ripe grapes in good condition. In the course of from two to five weeks, flower-spikes will most probably make their appearance. In this position, let the

plant remain until the flowers expand, when it may be taken to the conservatory until blooming is over. At the beginning of October, it should be again subjected to an ordinary stove temperature, and in February top-dressed with sphagnum, crocks, and charcoal, and treated as above recommended.—HENRY CHILMAN.

NOBLE'S NEW CLEMATISES.

ONE of the early pioneers through whose instrumentality the Clematis has become established as a popular garden flower, was Mr. Charles Noble, of Bagshot, and several of the spring varieties raised by him still hold their place in the estimation of cultivators. We refer more especially to the varieties named Miss Bateman, Albert Victor, and Lord Londesborough, which, in their particular style, though perhaps equalled, have not been excelled. They are all of the spring-flowering section, of which *C. patens* is the type.

Some three or four years ago, Mr. Noble exhibited several other crosses, many of which appear to partake of the blood of *C. florida*, but nothing more has been seen of them till this year, when a group was exhibited at South Kensington, which showed that some of them, at least, are destined to secure a share of the public favour. In one of them, the property of fragrance appears to be more fully developed than had been previously noticed. We append a few notes on the several varieties :—

AURORA.—This is an unusually free bloomer, the flowers double, of a reddish-violet colour.

E. BOOTH.—This variety bears flowers with seven or eight sepals, which are of a pale plum-colour down the centre, with the outer edge white. The sepals are deeply frilled, which gives the flower an elegant appearance.

EDITH MALLETT.—This variety has flowers with seven sepals, of a pale blush-colour, with a crimson feather at the base; the sepals broad and rounded at the extremity.

GEORGE ELIOT.—This is a profuse-blooming variety; the flowers as sweet-scented as Violets; they are medium-sized, eight-sepalled, the ground-colour dark lavender, shaded with violet.

IMOGENE.—A variety with eight or nine sepalled flowers, of a beautiful silky white; the sepals very stout and flat.

LADY CONSTANCE KENNEDY.—A very profuse-flowering variety, the blossoms having three rows of sepals, snowy white, the anthers deep plum-colour, giving it a decidedly distinct appearance.

LORD GIFFARD.—The flowers are of a reddish-pink, suffused with lilac; they are eight-sepalled, and very distinct and pleasing.

MARGARET DUNBAR.—A very profuse-blooming sort, with flowers of a deep blue, shaded with lilac (Oxford blue describes this exactly); centre white; a distinct variety, blooming profusely.

MAY QUEEN.—A bright-looking, handsome variety, the sepals eight in number, white down the centre, pale amethyst on the outer edge.

PIRATE KING.—A broad, eight-sepalled flower, of a pale plum-colour, the substance of both the flowers and leaves remarkable.

PROTEUS.—A variable sort; the flowers are sometimes quite double, at other times semi-double; the colour is a purplish-lilac; they are about eight inches in diameter.

SARAH BERNHARDT.—A free bloomer, and very distinct, the flowers being a full double, and the colour a pinkish-lilac.

W. E. GLADSTONE.—This variety has immense eight-sepalled flowers, nearly nine inches in diameter; the colour is a bright lavender.

Of the foregoing sorts, George Eliot for its fragrance, Lady Constance Kennedy for its purity, and W. E. Gladstone for its size, are, in our opinion, to be preferred.—T. MOORE.

CHANGE OF CHARACTER IN FRUITS.

IT may appear singular that fruits, especially Peaches, Pears, and Grapes, should have so many addenda to their titles, in the form of varieties of names. How ready some persons, on the mere authority of a new name, add to their collections sorts with high-sounding titles; and how widely the descriptions of these vary in different catalogues! There is a great fault somewhere in this matter of misleading the unwary. We know that soils and districts have much influence over fruits, flowers, and vegetables, but it is not justifiable on the part of growers to send out what they know to be old—and perhaps faithful—servants under new names. We note the remarks of your able correspondent on the kinds of Grapes and their synonyms, and such papers are very seasonable.

For example, the *Golden Hamburgh* Grape, which was the subject of a discussion some years ago, is believed by some to be a foreign introduction, though exhibited at Chiswick as being shown for the first time as a new kind. It may be possible that a fruit could be raised in this country identical with a foreigner, but how is it that the novelty so soon wears off, and the high commendations which welcomed the newcomer are so soon forgotten? That grape, when well done, is equal to Black Hamburgh, and will keep as long in good condition. I have had, for years in succession, from a vine grafted on the Black Hamburgh, splendid bunches of large amber-coloured berries, which have been sent to table in good condition up to the end of February.

W.H. Fitch del

P. Le Pannemaeker Chromolith. (Gand)

Gloxinia speciosa Variété
Chiswick White

The *Muscat Hamburgh* was for some time a subject of discussion as to parentage, &c.; but now, when that has long since been ended, that Prince of Black Grapes holds its own against all comers; and when pitted as to flavour against any other grape, the Muscat Hamburgh is sure to be the victor. I at one time considered it about the easiest grape to grow with which I was acquainted. Grafted on the Black Hamburgh, it did capitally, without any trouble. Circumstances, however, change results. At present, I find that it sets well, swells fine berries, makes even and shapely bunches, and possesses a flavour the best—even for this sort—which I ever tasted, but for three years past the colour has not got beyond a "clarety" tinge.

The *Golden Champion* is a grand Grape, when well done. A vine here, which was nearly killed among a number of others two years running—all doing well now—has borne fine crops of very large berries. The vine was cropped the same year that it was planted, and punished severely; but though it has never been robust, the fruit has been much admired; it crops freely, and seldom has any "spot" worthy of consideration.

The *Duchess of Buccleuch*, though a small berry, is of exquisite flavour. This kind I once grafted on a West's St. Peter's, which so changed its character for size of berry that it could scarcely be recognised. The Black *Lady Downe's* was inadvertently planted at the hot end of a Muscat house under my charge, and when ripe the fruit was so rich in flavour that strangers would not believe it was that excellent Grape at all. So much for changes of culture.—M. Temple.

CHOICE GLOXINIAS.

[Plate 550.]

EXCEPTING the Chiswick White, a very fine pure white seedling raised at Chiswick, and awarded a First-class Certificate at Kensington in 1880, the varieties represented in the annexed plate of Gloxinias are not named varieties. They are rather selected as showing that the seedlings produced from a good strain of flowers are equally, if not more useful for decorative purposes, than the named varieties; the latter, however, are many of them exceedingly beautiful, especially the French spotted sorts, and should be represented in all choice collections. These named varieties are necessarily grown from the tubers, and should form part of the earlier display; whilst seedlings sown in February, and grown on freely, come in as admirable successional plants for the later summer and the autumnal crops of flowers. Mr. Douglas relates that he had plants raised from seeds sown early in February, and pricked off and potted on as they required it, some of which were in flower, and all well established in 4½-in. pots, by about the middle of August; while two of the largest plants measured 19 in. across the spreading foliage.

Respecting the utility of the Gloxinia for room decoration, Dr. Bennet, of Weybridge, states that for several years past his various sitting-rooms have been quite in a blaze with Gloxinias during the summer period. "Indeed," he says, "I know not any other flower that blooms equally well in inhabited rooms in the light, but entirely away from sunshine; nor do I know any flower more beautiful in its delicately-varied hues. When it is known that these very beautiful flowers will live in cool inhabited rooms as well as an Aspidistra or an India-rubber plant, and continue blooming for one, two, or three months, the smallest buds gradually growing, expanding, and flowering, at a temperature from 60° to 66° only, it will be seen what an acquisition the Gloxinia is to home decoration." To obtain this result, they must be properly treated; and the right treatment, Dr. Bennet says, is to remove them from the house early in October, and place them in a vinery used as a plant-house during the winter, and only heated when it is necessary for the protection of the plants against frost. "About the first week in February the Vines begin to burst of themselves, and then a little heat is kept on uninterruptedly. The Gloxinias, which until that time have been left entirely without water, are watered, and at once start into growth. As soon as the first leaves appear, they are shaken out of the pots and repotted in new soil, composed of light loam, leaf-mould, and a little bone manure. They are placed on shelves about 18 inches from the glass and regularly watered. In March, and in April or May, other bulbs are treated in the same way for successional flowering. The first batch are ready to take

into the house, full of flower, by June. I have often had three-years bulbs with twenty or twenty-five blooms on at once."

The CHISWICK WHITE (Fig. 1) is remarkable for its size, its purity, and the stoutness of its texture; and it was, when shown, considered to be the best white variety which has been obtained. We know of no better which has been produced since.—T. MOORE.

PEACHES, NECTARINES, AND APRICOTS ON WALLS.

THE two former have done remarkably well with us this season. The trees have been clean, have made a good growth, and carried a good crop of fruit. The latter has been smaller, and is also considerably later than usual; fully half the crop still remained on the trees, at the middle of September.

It is singular, too, to note the difference between the time of ripening of Peaches and Nectarines. Though so closely related, and growing side by side on the same walls as Peaches, we had not, at the date just intimated, gathered any quantity of Nectarines. The earliest to ripen this season was the Pitmaston Orange; the Elruge, Violette Hâtive, and Hardwicke Seedling were, at this date, hard, though a few of them had fallen. Two of Mr. Rivers' seedlings, too, the Dante and Darwin, were splitting very much, especially the former. The origin of this Nectarine is, I believe, unknown; it seems as if it might have a good deal of Stanwick blood in it, as I have always found that noble variety split very much in the open air.

I attribute the under-size of Peaches and Nectarines this season to the long drought we had in the summer. This seemed to set the fruit fast in a thick semi-dried rind before any copious rains came. Root-watering could hardly prevent this check to the fruit, as the hot dry weather in June heated the walls to semi-scorching temperatures.

The incessant rains for nearly two months seemed rather to lower the flavour, than enlarge the size of these choice fruits. The absence of sun just when most needed also, no doubt, contributed to this lowering of the flavour of Peaches and Nectarines. In some cases, too, not a few of the fruit appear to have been flooded off, and have fallen in quite a premature state.

I find the simplest way of improving the flavour of such fruits is to gather them as soon as they part easily from the trees, and lay them on paper or cotton-wool on the dry shelves of an early vinery. The more arid the atmosphere, the better. The direct rays of the sun must not, however, be permitted to shine on the fruit, as that would scorch or scald them. This treatment appears to dissipate much of the watery sap, while the advance of temperature improves their flavour. Nectarines will bear this artificial ripening longer than Peaches, though the latter, if carefully handled, are also immensely benefited by it in such deluging seasons as this. Plums are even more amenable to this artificial ripening; and in many localities such splendid plums as Coe's Golden Drop and the Ickworth Impératrice can scarcely be finished in the highest style without it.

As to the trees, the great point will be to arrest their growth. The late heavy continuous rains have kept the trees as green as leeks. The growth must be stopped forthwith, if the trees are to be wintered in safety, or do any good next season. There are only three modes of arresting such late growth. (1st.) To mutilate or remove the growing power, that is, the leaves; this is done by cutting off the upper portion of all the more vigorous leaves, at the highest or growing end of the shoots; or in other cases, by removing a great many leaves, ripe or unripe: either practice forcibly arrests growth. (2nd.) A better way is to cut or cripple some of the more active roots; this cuts off the supplies, and so arrests growth; by thus reducing the watery sap, the declining sun is also the better able to convert that left into wood or buds for next year. (3rd.) To shield off from the borders every drop of water from now till the end of the year; this would also tend to check growth, and render the maturation of the wood possible. Certain it is that unless something is done, and that speedily, the possibility—almost certainty—is that the nice wood that has inspired us with hope for next year in the making, will form food for the winter's frosts, instead of a sure basis for abundant bloom next spring, or a good crop of fruit in the autumn of 1882.—D. T. FISH, *Hardwicke House.*

P.S.—The terrific gales, succeeded by biting frosts, on October 15th and 16th, have whipped and punished late growths very much, and suddenly arrested all further progress.—D. T. F.

ANEMONE JAPONICA ALBA.

ONE of the most valuable of hardy autumnal flowers is the *Anemone japonica alba*, more familiarly known as *A. Honorine Jobert*, which is a grand decorative subject. *Anemone sylvestris*, indeed, greatly resembles it, except that it flowers in early summer, instead of the autumn, as *A. japonica alba* does. This latter kind is one of the most desirable acquisitions for beds or borders, sending up, as it does, its lovely salver-shaped blossoms in the greatest profusion, the blossoms being of large size, and in fine weather lasting a long time in a state of perfection. They are,

moreover, of much value for cutting, as they are very distinct, and dress well among others. The typical form of *A. japonica*, though not so choice-looking, is a remarkably showy variety, bearing on branching stems about two feet high, big rosy-red flowers, with the petals more numerous than the one already referred to. *A. japonica hybrida* appears as if it were a cross between the two, and has blossoms of a soft pale rose, quite as large or larger than either; and the trio are so good as to be deserving a place in every garden.

The Anemones are all plants that like a deep rich soil, and as they send up offsets freely may be increased readily. The best time to resort to this mode of propagation is in spring, just as they start into growth, but where fine strong clumps are aimed at, the less they are disturbed or interfered with the better, as they flower most freely when left much to themselves. They are readily increased from cuttings of the roots.—T. Moore.

EUONYMUS CARRIEREI.

THIS plant, first described by M. Vauvel, in his journal, *Vulgarisation de l'Horticulture* (1881, No. 6), is the subject of an article and illustration in the *Revue Horticole* (1881, 373, fig. 92), from which we gather the following particulars concerning it. Its origin does not appear to be clearly known, but it is said to come very near to the *Euonymus radicans variegata reptans*. Whatever its origin, it is one of the prettiest of ornamental plants for rocks or other picturesque plots. It is a spreading shrub, with trailing branches, attaining 5 ft. and even more in length, and clothed with persistent, shining, coriaceous, broadly oval leaves, bluntly rounded at the tip, shortly dentate, and of a deep green above. The numerous green flowers are arranged in little stalked axillary corymbs, and the fruits are persistent, and burst open when mature, showing the orange-red seeds.

E. Carrièrei can be used either for edgings around shrubberies, or, like the Ivy, to hide walls; but it is even more suitable for garnishing rocks, or other more or less rocky, picturesque places. When the plants grow old, the numerous ramifications which have shot out from the horizontal parts constitute compact masses of foliage. The plant is extremely hardy; whatever the degree of cold, it does not suffer, even in its most herbaceous parts. It is multiplied by cuttings, which root with the greatest facility, and also by seeds, which the plant yields abundantly; but those who desire to preserve its true character, will do well to multiply it by cuttings. This *Euonymus* can be obtained at MM. Baltet Frères' nurseries, at Troyes.—M.

SUBURBAN GARDENING.

NOVEMBER.—The sign-manual of Autumn is now deeply written on Vegetation, and decay is slowly but surely giving place to the death that winter brings in its train. The gardener is grateful for the fine, open weather enjoyed in October, which, while it has enabled him to do arrears of cleaning-up, has also passed along in a pleasant manner a portion of what is regarded as the dullest season of the year.

Planting.—As planting is generally done in the autumn, it may be remarked that it is work that can be performed at any time from October to April, regulated, of course, according to the nature of the season. It is difficult to give any general rule, but, as a good authority remarks, "it may be laid down that autumn is the best time for *Conifers* and *Evergreens*, and spring for such *Deciduous Plants* as do not expand their leaves too early. But the universal canon to be observed is to plant as much as possible during wet or cloudy weather, and to refrain in sunshine, drought, or frosts. Such intervals of forced inaction may be profitably employed in settling the spot where each tree is to be placed, in digging the holes, and in providing the compost to be put round the *roots* when the planting is performed." This is good advice, and we may venture to supplement it by remarking that the villa-gardener in obtaining trees from a nursery should require that they have an abundance of fibres, and not merely a tap-root or two. Especially is this hint necessary in the case of Fruit Trees.

Kitchen Garden.—Now is the time to lift such roots as *Carrots*, *Parsnips*, and *Beet*, suffering them to dry a little, and then packing them away in a cool, dry place, in sand or cocoa-fibre, but on no account allowing moisture to fall on them. Some gardeners make a practice of bending the outside leaves of *Cauliflower* and *Broccoli* over the heads, to keep them unharmed during frost. Some *Endive* should be tied up occasionally to blanch, and keep up a succession. Continue to earth up *Celery* as required, but be careful not to allow the earth to penetrate to the hearts of the plants. In dry weather, a little soil should be drawn up to the rows of *Cabbages* with the hoe, and young autumn-sown cabbage-plants should be planted out for a spring crop. All vacant ground should be manured, and dug or trenched as required. Some *Sea-kale* should now be covered with pots or leaves and litter, a foot or so in thickness, and *Rhubarb* also; a few roots of the latter can be put in a shed or cellar to blanch, and afford an early crop.

Fruit Garden.—As soon as the leaves of such *Wall fruits* as Peaches, Nectarines, and Apricots have fallen, pruning may be commenced, it being generally conceded that early winter is the best time. The late sorts of *Apples* and *Pears* should be gathered without delay, and any fruit stored away should be looked over, and such as show signs of decay picked out. *Espalier trees* can be pruned, and also standards and dwarfs in the orchard, as favourable opportunities offer. Pruning is a matter depending in a great measure on the state of the weather. Market gardeners generally prune early, in order to get the ground between their fruit-trees dug and cleaned.

Flower Garden.—By this time a general clearance should be made of the flower-beds, and they should be replanted with any useful spring-flowering subjects. If not planted in this way, the best thing to do is to throw the beds up roughly for the winter. The smaller the garden, the less difficulty is there in filling up vacant beds or borders with spring-flowering plants, and in the absence of suitable plants, it does not cost much to get in a supply of *Wallflowers*, *Pansies*, *Daisies*, &c. All decaying stalks of herbaceous plants should be cut away, the border cleared of weeds, and slightly forked over on the surface, and a dressing of dung, old potting-soil, or decayed leaves, given. All leaves should be gathered up, and stored away for potting-soil; it is a most difficult thing to procure at times. Garden walks should be weeded, and kept well rolled; and the grass-plot kept swept, and well rolled also.

Cold Frames.—The difficulty many find with cold frames is to keep the worms from working up into the pots. They will find their way through rubbish, cinder-ashes, &c. The best thing to be done is to look over the pots occasionally, and in all cases where there is evidence of the presence of worms, to turn the plants out of the pots and capture them. Slugs, too, are very destructive just now, by eating away the hearts of some things, as well as devouring the leaves of others. Air is of some importance while the weather is damp, and while the weather is mild the lights should be tilted up, so as to allow of a free current of air passing over and above the plants. Decaying leaves and anything likely to bring damp should be picked off, and the surface-soil stirred. Green-fly can be kept under only by means of fumigation, and two efforts, at intervals of five or six days, will soon rid the plants of this pest. Any repotting necessary should be done without delay; the later it is deferred, the less likely are the plants to commence making roots before spring. Some more *Bulbs* can be potted for succession; and as soon as possible, clumps of *Lily of the Valley*, *Spirea japonica*, and *Dielytra* should be potted up for forcing in spring.

Greenhouse.—In the cold greenhouse the signs of the approach of winter multiply daily. A collection of *Coleus* in pots, that have been very pretty and bright all the winter, were the first to give evidence of its on-coming, by shedding their leaves, and the tuberous-rooted *Begonias* are following suit. After the experience of last winter, it is disheartening work to attempt to keep out the frost by means of homely appliances for heating, as they localise rather than distribute the heat, and the *frost* destroys when the heat does not reach. There is nothing like a supply of hardy plants to fall back upon, as they furnish the house, and give early bloom, if some early spring-flowering things are included. *Pelargoniums*, *Fuchsias*,

and a few other things are still blooming, and if the weather keeps warm they will yet continue to do so. *Chrysanthemums* are now taking the place of the tenderer things. So far, they promise to bloom well, and must be watered carefully, and kept from mildew. The chrysanthemum will continue to expand its flowers in a cold-house, if the frost can be excluded from it. Water should now be given with care, and, as far as possible, early in the day, so that the floor of the house may dry by evening. But it is in cold, dull, foggy weather that this precaution is most necessary to be observed.—SUBURBANUS.

GARDEN GOSSIP.

THE presentation of a TESTIMONIAL to Mr. DOMINY took place at the meeting of the Royal Horticultural Society, on October 11th. The presentation was made by the chairman, Sir Trevor Lawrence, Bart., M.P. For nearly 43 years, he said, Mr. Dominy had been in the service of the Messrs. Veitch, and indeed his high personal character was well known to them all; but it was rather on account of his achievements as the first raiser in this country of hybrid Orchids that his friends had combined to do him honour. In 1864 Mr. Dominy was presented with a piece of plate by the Devon and Exeter Horticultural Society, to commemorate the raising of his first hybrid—the beautiful *Cattleya exoniensis*, which was the result of a cross between the Syon House variety of *Cattleya Mossiæ* and *Lælia purpurata*, and which grew for seventeen years before it flowered. In 1865 Mr. Dominy also received a medal for *Calanthe Veitchii*. Mr. Dominy had raised some 23 or 24 hybrid Orchids, and no fewer than 9 were that day exhibited, which showed how great an interest was being taken in them. The more remarkable of his hybrids were the *Cattleya exoniensis; Cattleya Dominii*, the result of a cross between *C. Dowiana* and the hybrid *C. exoniensis*, a most beautiful flower; and *Calanthe Veitchii*, which was found in every collection, bringing a flush of pink into the houses at a time when high colours were scarce. When a wish was expressed by friends that a present should be made to Mr. Dominy on his retirement from the service of the Messrs. Veitch, Sir Trevor said he was happy to do all he could in furtherance of the object, and the result had been the subscription of over £260 by 116 friends. From this had only been deducted the expenses of advertising, and the purchase of a gold watch, which was to bear the following inscription:—Presented to John Dominy, with 200 guineas, by 116 friends, as a mark of regard and esteem, and of admiration for his skill and success in raising and growing Orchids, and in horticulture generally.—Trevor Lawrence, Bart., M.P., October 11th, 1881.

— WE are pleased to find how well ANTHURIUM ANDREANUM is behaving under cultivation. Every leaf develops with it a flower-spathe, and these go on increasing in size as the plants gain vigour. Mr. Bull has a fine display of these, unequalled for splendour even by its rival the better known *A. Scherzerianum*. There is at present considerable diversity in regard to the size of the flower-spathes, some of them measuring 5 in. or 6 in. in diameter, but whether this is the result of vigorous growth, or of variation in the original stock, is not quite apparent.

— THE LILY DISEASE has been made the subject of recent comment by the Rev. M. J. Berkeley in the *Gardeners' Chronicle*. He concludes that it is by no means attributable to the ungenial weather of the present season, but is due to a parasitic fungus, allied to *Peronospora*, with large elliptic spores, the contents of which seem ready, as in the Potato fungus, to be converted into zoospores. He found the fungus perfectly developed on the buds of *Lilium auratum* and *L. superbum*, on the peduncles of *L. chalcedonicum*, after the capsules were formed, and on the large blotches of the stem of *L. pardalinum*. Buds of *Hyacinthus candicans* have similar spots, and in all probability their condition is due to the same cause. The fungus is evidently nearly allied to the *Ovularia obovatum* of Saccardo, but the threads are distinctly articulated and the spores elliptic, resembling in shape and size those of many of the larger Peziæ. The species may be named *Ovularia elliptica*, characterised by the articulated threads, abundant mycelium, and large elliptic perfectly facile epispore. Mr. Berkeley thinks it may be a question whether *Ovularia* and *Ramularia* are well separated from *Peronospora*, but the habit of the three is sufficient to justify their separation, at least for the present.

— IN growing HYACINTHS in GLASSES, the *Irish Farmers' Gazette*, advises, before placing the bulbs in the glasses, to lay them on their sides in a cellar, or other dark, damp place, and let them remain there for some days. Here root-action will soon be called into life, and a protruding ring of white rootlets promptly issue from the base of each bulb. As soon as these have developed to the extent of an eighth of an inch or two, the bulbs are to be put into their glasses, with the water just in contact with the ring of absorbents, now ready to take it up. The water used should be rain-water and clean, and the temperature raised when placing the roots in contact with it. The glasses should be placed in a dark cellar or press in a room where there is no fire kept. Here they should remain till the roots have got down three or four inches into the water, after which the glasses may be exposed gradually to the light, and finally they should stand in the coolest and at the same time the most lightsome and airy position it is possible to afford them. The plan of getting the bulbs to start before placing in the glasses has the advantage of showing any weakness or tendency to decay at the base of the bulb, and affords an opportunity of rejecting any not manifesting soundness and vigour.

— AMONGST Cauliflowers, VEITCH'S AUTUMN GIANT still maintains its position in the foremost rank, and for autumn work it is unquestionably far superior to any other, as it endures the heat of summer well, and turns in with heads that are not only very large and solid, but as white as snow, and of most delicate flavour. Good as it always is, it has this year outrivalled itself; the rains, after the hot sun, having set the plants growing at a great rate, and caused them to be particularly strong by keeping them clear from the "blues," a malady that affects all the Brassica tribe more or less in dry weather. The way to prevent it in a great measure is to trench deep for Cauliflowers, and to plant the rows wide apart between Potatos, or any-

thing that leaves the ground early and allows the Cauliflowers plenty of room to themselves, and if they can have a mulching of littery manure and a soaking or two of sewage, the two are a very great help. Next in point of value to the Giant Cauliflower comes VEITCH'S AUTUMN BROCCOLI, which is much like the former in every respect, except in being later, and on this account it carries the supply on well into the winter. On the approach of frost, "J. S.," who writes the above, recommends laying them in on a sheltered sunny border, protecting with mats or straw by night, and thus preventing injury to the hearts.

— MR. R. THOMPSON long since recommended the plan of driving the TURNIP FLY from a garden plot by watering the ground from one side, and proceeding in regular order, driving the fly before the watering-pot. A writer in the *Garden* suggests that the plants should be surrounded by a cordon of wood shavings saturated with coal-tar in a cold state, and that the beds should then be watered with a watering-can having a small rose, since by thus slowly driving the fly forwards, they will hop at last into the shavings and be held fast by the tar.

— A NEW BLACK CURRANT called BLACK CHAMPION, shown by Mr. Dunnett, of Dedham, was recently awarded a First-class Certificate at South Kensington. It is the finest variety yet known, being extremely prolific, with large berries, ripening simultaneously in the same cluster. It will be quite an acquisition among new hardy small fruits, and will be especially valuable for market-growers, on account of its free-bearing habit.

— THE following are the weights of the HEAVIEST GOOSEBERRIES exhibited at the National Gooseberry Show at Manchester:—Premier red, Rover, 29 dwts.; premier yellow, Ringer, 26 dwts.; premier green, Shiner, 25 dwts. 6 grs.; premier white, Princess Royal, 23 dwts. 10 grs.

— THE mode of PROPAGATING DOUBLE CHINESE PRIMROSES adopted at Chiswick is thus described:—"Early in June the large plants that need division are thickly surfaced with sandy soil, the stems of the crowns being first well cleansed of all decayed leaf-stalks. These after a time are turned out and divided, when each shoot forms a plant, all having good clumps of roots, and being fit to pot into 48's at once. It is beyond question an excellent plan."

— IN Sir H. Peek's flower garden at Wimbledon, COCKSCOMBS have been introduced as a novel feature, with good effect. One of the beds on the terrace near the house was planted with Cockscombs, evenly grown, and the behaviour of the plants was such, that they may possibly be more extensively used as bedding plants in future. In Battersea Park the Cockscombs were dotted about, but at Wimbledon Mr. Ollerhead had them planted *en masse* with much better effect. The combs were well formed before the plants were planted out, and the fact of their doing so well in a wet season is a point in their favour as out-of-door decorative plants.

— AMONGST the ornamental grasses, APERA ARUNDINACEA appears to be a pretty novelty, and is highly spoken of. It is quite hardy, and either for the ornamentation of the border or for the decoration of the flower vase, the paniculate feathery inflorescence, slender, graceful, nodding, and purplish in colour, is exceedingly graceful, and is said to be as persistent as pretty.

— A WRITER in the *Garden* describes his success in the cultivation of the EDELWEISS as follows:—"My patches of it, three in number, are growing luxuriantly, in a mixture of about two parts good rotting turf from an old pasture, one part peat, and one part coarse sandy grit. The latter contains pieces from the size of a walnut downwards. This mixture I use for all truly alpine plants. My three patches face three different aspects, but I see no difference in their growth. They are all above the ground-level from 1 ft. to 1½ ft. The finest piece, formed of three plants, now carries twenty-four heads of flowers, and many have been gathered, so charming are they for button-holes, used in conjunction with sprays of Thalictrum minus, which stands very much better than the fronds of the Maidenhair fern. Ladies are all charmed with it, and use it in their hats and bonnets."

— BOTH MALT-DUST and KILN-DUST are valuable as manures. Malt-dust consists of the shoots of the germinating barley separated from the grain by the process of screening, while kiln-dust is that portion of the small rootlets which falls through the wire gauze and becomes mixed with some of the ashes of the kiln fire. Dr. Voelcker states that "both kiln and malt-dust are excellent manures, particularly when used in a slightly fermented state. When kept in a heap, fermentation soon sets in, especially when the heap is occasionally moistened with urine or liquid manure. Added to compost heaps, their value becomes very much enhanced, but it is not usual to apply this refuse matter in such a form. Generally, malt and kiln-dust are used as a top-dressing, and applied with success to almost any crop. They act quickly, and produce striking effects on vegetation. Their effects on grass-land are especially surprising."

— A WRITER in the *Journal of Horticulture*, referring to COLEWORTS FOR WINTER AND SPRING USE, observes that they form one of the staple crops of market gardeners, who occupy with them ground that has been vacated by early peas, potatos, &c. They are also planted between rows of dwarf kidney beans—in fact, everywhere where space can be found either between other crops or under trees. They are pulled up and sold in bunches during the winter and spring, and when fresh no green vegetables are more delicious. Coleworts, then, form an adventitious crop of such value as to be regarded as a staple product of the garden. Almost any of the small cabbages of the early York type may be used as coleworts, and as regards quality, nothing of their kind can surpass them; but they lack the all-important essential of hardiness, which is possessed by the true Rosette colewort. It is questionable if the frost-enduring property of this variety is sufficiently understood by cultivators generally. During the last extremely severe winter large breadths passed almost scatheless through the ordeal, while Savoys and kales were killed. Probably the dwarf habit of the colewort was much in its favour, as the plants could be the more effectually protected by the snow; but apart from this it is a distinctly hardy vegetable, and as such it has strong claims to the notice of gardeners. An impression prevails in the minds of some people that

early July is soon enough for sowing coleworts; but it is not. About the middle of May is the proper time, and the plants are then ready just when they are wanted, and have time to become strong before winter. Strong plants may be planted about 15 in. apart, and if they have been raised from a true stock they will have an attractive appearance in the autumn, as all the plants will be of the same height.

— In one of the daily journals we have found some comments on the manner in which to Cut and Cook Asparagus, and in which the waste which occurs in the handsome bundles of large "grass," about six-sevenths of which is white and uneatable, is properly censured. The writer observes that the same length might be sold for the same price all eatable, and states that the evil arises from cutting the asparagus too soon and below the surface of the beds. "I allow mine to grow eight or nine inches above the ground, and then cut an inch above the ground, and thus obtain seven to eight inches of green tops, the whole of which is eatable and of good flavour." Asparagus should be cooked in bundles, upright in the pot, with the tops just above the water, to prevent their being overdone whilst the stems are being sufficiently cooked.

— In a collection of Dwarf French Beans, shown at Maidstone, were a few new types of good promise. The *Monster Long-pod Negro* is a very fine selection from this well-known variety, with long and handsome pods; it is a very free bearer, and for a general crop, as well as for market purposes, appears unrivalled. *Bunyard's Broad Pod* is a very distinct type, with broad pods, in shape like those of the Scarlet Runner, of medium growth and very prolific; this appears to be an excellent variety in every respect. *Paris Red*, a selection from the Canadian Wonder, represents a very fine type, having long and handsome pods, and very free. It may be assumed that the Canadian Wonder originated as a selection from the Red Flageolet of the Parisians, and so the Bean is being surely improved.

— At Speddock, near Dumfries, there is, states the *Gardener*, a very remarkable specimen of the Black Hamburgh Vine, distinguished alike for its size, and for its splendid produce. The vine at Hampton Court, as well as those at Cumberland Lodge and Finchley, are larger, but the produce of these is not so fine as that of the Speddock vine. This vine is about eighty years old, and fills a vinery something over 60 ft. long and 20 ft. wide, with a lofty back wall, and consequently a long rafter. The vine is planted at the extreme east end of the house, so that its growth is entirely to the west. Last year it bore 600 lb. of grapes of superb quality, both as to size and finish. This year it has fully 700 lb., every bunch from end to end and from top to bottom being a model one; and while some are quite 3 lb. weight, they will average at least 2 lb. each. They are large in berry, conical in shape, and jet black. Mr. Smith, who manages all his vines in four vineries with great care and skill, wings all the bunches, so that they are remarkably uniform in shape. This grand vine is in a most vigorous condition, and if the vinery were extended 60 ft. to the east, it would soon fill it all; but the nature of the ground prevents extension in that direction.

— A remarkable case of Sportiveness in the Tulip occurred during the last blooming season in the garden of S. Barlow, Esq., Stakehill House, Castleton, who is one of the enthusiastic tulip-growers of Lancashire. The plant was a seedling, of no particular merit as a florists' flower; it had broken as a bizarre, that is to say, yellow ground, with dark-coloured markings; five of the perianth segments were of this bizarre character, while the sixth had the colour and markings of a byblœmen, that is to say, white ground with dark markings.

— At Chiswick, a Cherry called Noire Précoce de Strass, has been found to be one of the earliest, having been exhibited in a ripe state on June 14th. Though somewhat small, it possesses a good and delicate flavour, and is desirable as an early fruit. According to M. Leroy, this is the same as the Reine Hortense, but that is described as a large July fruit.

— A beautiful specimen of Philesia buxifolia is growing in the garden of J. D. C. Graham, Esq., Dunlop, Ayrshire. This plant is three feet through, and as much in height, and has been literally covered with its beautiful, deep rose flowers. It is growing in a cool house, and is found easy to cultivate.

— At the summer shows at South Kensington and elsewhere, Messrs. Carter made a very nice display of Petunias in pots, being part of a collection of many thousands which were being grown at their nurseries for seed. Some of the forms are named as follows:—Cerise Brilliant, bright cerise-scarlet; White Pearl, pure white; Blue Vein, reticulated; Stars and Stripes, beautifully variegated white purple and crimson; Maltese Lace, delicately fringed; Queen of Roses, rich rose-pink, very fine colour; Green-edged Perfection; Japanese, prettily serrated; Double Rosette, double; Purple Prince, rich purple crimson; and King Crimson, crimson, with white throat.

— We find the popular name of Sweet Betsy, which is new to us, is applied to the Red Valerian, Centranthus ruber, by the people of the Isle of Thanet and the adjacent parts of the county of Kent. The plant is very abundant on the chalk cliffs and railway cuttings in that county, and is also a very showy and very frequent occupant of cottage gardens, both there and elsewhere.

— The excellent quality of the Garden Pottery manufactured by Mr. J. Matthews, of Weston-super-Mare, is well-known to the horticultural world; and its reputation has been fully sustained by the awards made during the present year. Thus, at the Annual Show of the Royal Manchester, Liverpool, and North Lancashire Agricultural Society, held recently at Blackburn, a silver medal—the third gained this year—was awarded for the best collection of Mr. Matthews' vases; and at the Manchester International Show his exhibits in this class obtained the substantial recognition of a gold medal.

— Amateurs do not generally realise the fact that Paper is a Good Protector from Frost. The placing of a paper cone, a dozen of which can be made out of a *Times'* supplement, will often be sufficient protection to plants which, although indoors, are at the windows, and liable to be frost-bitten. The power which paper has of

stopping heat or of non-conducting, is much more considerable than the majority of persons suppose, and its extreme cheapness should make it a great aid to the multitude of persons who are not able to keep greenhouses, but yet are fond of flowers.

— A CORRESPONDENT of the *Journal of Horticulture*, writing of the LEVIATHAN BROAD BEAN, states that he is delighted with it. Its sturdy branched growth and long pods have an attractive appearance. The pods are borne in pairs, commencing at 12 to 15 inches from the ground, the pods being 10 to 14 inches in length, and containing six large beans of good colour, "greener" than those of the ordinary Longpod and Windsor section. The pods invariably fill well; not one that has been opened contained less than six beans. The number of pods on a stalk is six, and the beans are of the size of Windsor, though it is evidently of the Longpod section, and is very much in advance of Seville Longpod, or indeed any other. The total height of the haulm, 2 ft. 9 in., renders it admirably adapted for small gardens, not the least of its merits being its earliness.

— AS regards HYBRIDISING ROSES, a writer in the *Gardeners' Chronicle* observes that whatever may be the modern practice amongst French Rose-growers, it certainly was not formerly the habit amongst them to artificially hybridise, and yet all the grandest Roses we have, date back to long periods. Thus, amongst the best twelve varieties occur Charles Lefebvre, raised in 1861; Alfred Colomb, in 1865; Marie Rady, 1865; Madame Victor Verdier, 1868; Marie Baumann, 1863; Baroness Rothschild, 1867; Louis van Houtte, 1869; Marquise de Castellane, 1869; François Michelon, 1871. Coming next to them are Dr. Andry, 1864; Comtesse d'Oxford, 1869; Duke of Edinburgh, 1868; Sénateur Vaisse, 1859, &c. Even now, there are but one or two roses of the last two years that are likely to displace these older varieties —A. K. Williams, and, it may be, Abel Carrière.

— A NEW edition of the WILD GARDEN, with illustrations (*Garden* Office), has recently been issued. It is a book written with a good object, that of bringing into notice the many interesting and strikingly-handsome, hardy plants, which are not exactly suited for the more dressy parts of the garden; and though perhaps the writer rides his hobby rather hard, there is much to be said on the side of the question which he adopts. Certain it is that in most garden establishments there are places—odd nooks and corners—where the wild plants which are here recommended may be grown with complete *abandon*, and where the best pictures of a wild garden, each varied with its own peculiar features, may be realised. The illustrations are very pretty and effective, and altogether, the work may do good, by its protest against ultra-formality in the amount of ornamental plants in our outdoor garden. On the whole, it may fairly be welcomed for its definite and praiseworthy object.

— UNDER the title of COMPANION TO PRACTICAL BOTANY, Mr. Wills, of the Westminster College of Chemistry, has issued a little volume intended to aid him and his staff in teaching this necessary science to the students of medicine. One page is devoted to a tabulated description of the principal official and other illustrative plants, and over against this a blank page is reserved for pasting in a figure of the plant, a series of cheap illustrations being in course of preparation. We are assured that it meets its object completely, and this is the best test of success. The subjects run up to 100 in number, and conclude with the necessary index.

In Memoriam.

— FREDERICK CURREY, ESQ., who for many years acted as Secretary, and lately as Treasurer, to the Linnæan Society, died on September 8th, at the age of sixty-two years. As a botanist, Mr. Currey was best known by his publications on Fungi.

— JOHN RUSSEL, Esq., of Mayfield, Falkirk, died on October 17th, aged sixty-one years. The deceased gentleman was a most enthusiastic Orchidophilist, since for twenty years he owned, and his excellent gardener, Mr. Sorley, maintained in good condition, a very valuable collection of Orchids. A slight break occurred in 1875, when the greater part of the collection was sold by auction; but after the sale, Mr. Russel again started to form the excellent collection now existing.

— MR. JAMES CRAIG NIVEN, Curator of the Hull Botanic Garden, died on October 16th, after a long and painful illness, at the age of 53. He was born in 1828, of Scotch parents, at Dublin; his father, Ninian Niven, for many years held the position of Curator of the Royal Dublin Societies' Botanic Garden at Glasnevin. Mr. J. C. Niven was educated in Dublin with a view to entering the medical profession, disliking which, he commenced his career in his father's profession at the Royal Botanic Gardens, Belfast, in 1843, where he passed through the initiatory stages of his training, and after two years' residence he went to the Duke of Buccleuch's extensive establishment at Dalkeith Palace, under Mr. McIntosh. In the early part of 1847, he moved to the Royal Gardens, Kew, and scarcely had a year elapsed, before a vacancy occurred in one of the most important botanical departments of the establishment, and though then under 20 years of age and the youngest in the establishment, he received the appointment. Towards the close of 1852, the Curatorship of the Botanic Garden at Hull was vacant. Sir W. Hooker being applied to, recommended Mr. Niven, who was appointed to the post, in accepting which he undertook a task of no ordinary character, but by his industry and energy, he succeeded within twelve months in remodelling the Garden, and giving it so much of a scientific character as enabled it to pass muster amongst the *savants* of the British Association. The collection of plants also rapidly increased, till in 1866 the catalogue of hardy, herbaceous, and alpine plants then in cultivation numbered upwards of 6,000 species. In 1853, Mr. Niven was appointed the botanical lecturer in connection with the Hull School of Medicine, and subsequently to the Chemists' Association. Altogether, during his career in Hull, he delivered upwards of 38 courses of botanical lectures. Mr. Niven was a frequent contributor to the horticultural periodicals, including the FLORIST; he also edited the reissue of *Maund's Botanic Garden*. As a landscape gardener, he had a long and extensive practice. The Society for Promoting Window Gardening amongst the working classes of Hull is mainly indebted to him for its success; and his thoroughly practical *Instructions for the Growth of Plants and Bulbs in Windows* have done good work, in creating a love for window-plants.

J. L Macfarlane del.

Chromo. P. Strocbant, Chent

Tropæolum Empress of India

TROPÆOLUM EMPRESS OF INDIA.

[PLATE 551.]

IN this novelty, of which Mr. Macfarlane has given a very fair representation in the accompanying plate, but the colour of whose flowers is really unattainable by art, we have one of the very best of the new annuals suitable for decorative purposes. It has been raised and selected with great care by Messrs. Carter and Co., of Holborn, at their seed grounds at St. Osyth, where during the past summer we saw a large breadth of it, so true and uniform in character that the crop might have been supposed to be the produce of cutting plants rather than of seeds, had we not the assurance of the growers to the contrary. So uniform, indeed, were the plants, that each might be practically regarded as a counterpart of its neighbour; and there were scarcely to be found over the whole piece, and certainly not to be noted without search, any of those unseemly gaps in the long, thick-set rows, which indicate that 'rogueing' has been a necessary item of cultivation. It was certainly the most brilliant and dazzling piece of floral colour we ever saw.

This variety is one of the dwarf annual forms of *Tropæolum majus*, of which there are several, varying much in colour, but mostly very desirable subjects for summer bedding. It is of the close, compact habit of the sort known as King of Tom Thumbs, and is remarkable for its dark blue-green foliage and its large and abundant deep, but brilliant crimson, flowers, which are by many shades darker and richer in hue than the highly popular variety just named, and indeed come nearest to the intense crimson-scarlet shades to be selected amongst the cultivated forms of *Phlox Drummondii*, the colour, as in that plant and in some of the bright-tinted *Verbenas*, having a decided glow, which adds greatly to its effectiveness in the mass. There is no exaggeration in the statement that it will rank far ahead of anything in the same way.

As a companion to this novelty, we may commend to the notice of our readers the variety called Spotted Queen, the flowers of which are of the deep golden tint called "dead-gold," a colour which, in the sunshine, is, however, anything but dead and dull, being bright and sparkling in the extreme, the scarlet spots on the petals making it still more effective. For intensity and richness of colour, Spotted Queen ranks amongst the yellows as the equal of Empress of India amongst the scarlets, and the two would make a splendid pair to bed out in contrast.—T. MOORE.

THE CULTURE OF WALL-FRUITS.

CHAP. XXV.—THE PEAR *(Concluded)*.

HAVING treated of the methods which it is desirable should be adopted to secure, as far as possible, a well-drained medium for the roots, we may now advert briefly to a few other important matters to be observed in the general culture of Pears on walls. First, as regards aspects, both east and west walls are suitable and favourable for the general crop, but for early purposes it may be useful to occupy a small space on the south walls with a few of the earlier sorts, amongst which Williams' Bon Chrétien will be found suitable for early work. As regards quality, I cannot recommend either aspect as being superior to the other, only, it may be noted, that in good seasons the same variety from the south wall will be ready for use a week or ten days earlier than from the other aspects.

The kind of stock on which the Pear is worked is generally allowed to be a very important matter. They are of two kinds, the Wilding—commonly called the Free Stock, and obtained from seeds of existing sorts—and the Quince. As the use of the latter has lately become a matter of controversy, I shall only venture to add a few suggestions as to the principles which should guide us in the selection; and in so doing, I shall only presume to detail the results of my own experience, not to lay down an arbitrary rule, as I believe that in most places the natural conditions of the soil in the locality to be planted upon will be the best guide.

For example, in comparatively shallow soils on a porous, gravelly, or otherwise warm subsoil, a very free stock is the most likely to pro-

duce prolific trees, and to bring fruit of a good flavour. Attention must, however, be occasionally paid to the denuding the trees of a few of their strong roots, in order to keep them within reasonable bounds; for even in shallow and unprepared soils, if the subsoil is not irretrievably bad, trees on the free stock will, when they have got thorough hold of the ground, break out into a habit of unfruitful, luxuriant growth, very unsuitable for wall-culture. This tendency can only be checked by the timely removal of some of the feeders. The same effects as regards an unfruitful luxuriance of growth, but in a much greater degree, will follow the planting of free stocks on soils of an opposite nature, that is, deeper, of stronger soil, and in a natural state, probably not so well drained—a luxuriance which, though thoroughly suitable for standards in an orchard, must for wall-culture be checked by a much more rigorous application of restrictive measures.

But mark the contrast. If, in the deeper, stronger soils just referred to, Pears on the Quince stock are substituted, the restrictive influence of the stock will keep down luxuriance of growth, and thus prevent the necessity for root-pruning; and instead of being checked, the trees will require encouragement, while restriction will be more often required as to the amount of fruit which the trees are allowed to bring to perfection. Why is this? Because the Quince is more at home in soils of a deep, strong, and retentive character.

Does not this point to the principles which should be our guide in the formation of artificial borders, wherever they may be considered essential to cultural excellence? Thus, if the Pear or free stock is preferred—it being by many considered the more durable, although I have not found it so—the borders may be made more shallow, very well drained with a good thickness of rubble, and the bottom cemented, to prevent the roots from penetrating an uncongenial subsoil. On the contrary, if the Quince stock is selected, the borders may be made deeper, and of stronger and more retentive soil, but they must be equally well drained, though they need not be cemented.

It should also be borne in mind, in the formation of these borders, that porosity of soil and a perfect system of drainage are essential to the successful application of surface-dressing, which is, indeed, a most important item in good cultivation, and when applied to ill-drained and close soils is apt to render them sour and waterlogged, thus leading the operator to condemn surface-dressing, when, after all, the evil lies below, in the want of drainage.

Before leaving the subject, it is necessary to observe that only melting sorts of Pears—which, indeed, comprise all the most eligible sorts in cultivation—should be worked upon the Quince stock, as their quality is thereby improved; while, on the contrary, sorts which are naturally gritty at the core have that tendency increased when grafted on the Quince, or Thorn, which latter, in strong clay land, is sometimes used as a stock, but in my opinion is never durable enough to render its use desirable.

The horizontal system of training is by far the best adapted for the Pear, and the most easily managed; and, as well-trained trees prepared on that system, on either stock, and calculated to commence bearing at once, may now be obtained, I would strongly recommend them. However, in selecting such as are on the Quince, it is essential to see that they are worked close to the ground, so that the stock may be well covered with earth. This will enable it to enlarge itself proportionately with the top development of the tree.—JOHN COX, *Redleaf.*

VINES AND VINE CULTURE.

CHAP. XVIII.—THE VARIETIES OF GRAPES.

(Continued.)

THE descriptions of the varieties of Grapes included in our Synoptical Table are here continued, from page 164:—

MUSCAT ESCHOLATA.—A synonym of Muscat of Alexandria: which see.

MUSCAT FLEUR D'ORANGER.—A synonym of Chasselas Musqué: which see.

MUSCAT GRIS.—A synonym of Grizzly Frontignan: which see.

MUSCAT HAMBURGH (44).—An oval black Muscat Grape. *Synonyms:* Black Muscat of Alexandria, Red Muscat of Alexandria, Snow's Muscat Hamburgh, Venn's Seedling Black Muscat.

Vine.—Growth moderately vigorous, free-fruiting. *Leaves* large, deeply lobed and serrated; dying off yellow.

Fruit.—*Bunches* large, with somewhat long, loose shoulders; very frequently badly set, the bunch containing a number of half-developed berries. *Berries* large, or above medium size, ovate or short ovate. *Skin* thin, dark purplish-black, with a fine bloom. *Flesh* melting, very juicy, rich, sweet, and with a fine Muscat flavour, but not nearly so pronounced as in the White Muscat.

Muscat Hamburgh.

History, &c.—This is a very old grape, having been grown for many years under the name of the Black Muscat of Alexandria, but almost lost until reintroduced to notice by Mr. Snow, of Wrest Park, about 25 years ago, as Snow's Muscat Hamburgh. It is now generally cultivated. Venn's Seedling, which is a reputed seedling raised by Mr. Venn, near Bristol, about 1870, is stated to be of better constitution, &c., but after having grown them both, I have not been able to detect any difference.

Cultural Notes, &c.—Although of free growth, &c., this grape is found somewhat difficult of cultivation through its tendency to shank. Various practices have been adopted and advocated to obviate this evil, such as growing in a warm border, and grafting on various stocks, several nurserymen keeping a stock of it worked on the Black Hamburgh, which for a time seemed to suit it well. A vine of this variety grafted at Chiswick on a late coarse Spanish grape, is so altered thereby that very little trace of Muscat is apparent. To succeed thoroughly well with this fine grape, it should be grown in a warm vinery.

Season.—Mid-season; does not keep very long in good condition after ripening.

Merits.—First-class in quality and appearance, but somewhat delicate.

Muscat de Julliet.—A synonym of July Frontignan: which see.

Muscat St. Laurent.—A synonym of St. Laurent: which see.

Muscat de Lierval (51).—A round black Muscat Grape. *Synonym:* Lierval's Frontignan.

Vine.—Growth free, but slender; very fruitful. *Leaves* small, roundish, dying off reddish.

Fruit.—*Bunches* small, short, compact, remarkably well set. *Berries* small, round. *Skin* rather thick, black, with a fine bloom. *Flesh* juicy, sweet, and with a very pleasant Muscat flavour.

History, &c.—Received from M. Leroy, of Angers, and grown at Chiswick.

Cultural Notes.—Succeeds well in good seasons on the open wall; suitable for orchard-house cultivation.

Season.—Very early.

Merits.—Third-rate.

Muscat Muscadine.—A synonym of Chasselas Musqué: which see.

Muscat Noir.—A synonym of Black Frontignan: which see.

Muscat Noir d'Angers.—A synonym of Angers Frontignan: which see.

Muscat Noir de Jura.—A synonym of Jura Frontignan: which see [pp. 131, 181].

Muscat Noir de Madère.—A synonym of Madeira Frontignan: which see.

Muscat Noir de Meurthe.—A synonym of Meurthe Frontignan: which see.

Muscat Noir Ordinaire.—A synonym of Black Frontignan: which see.

Muscat Ottonel.—A synonym of Ottonel: which see.

Muscat Primavis.—A synonym of Chasselas Musqué: which see.

Muscat Romain.—A synonym of Muscat of Alexandria: which see.

Muscat Rouge.—A synonym of Grizzly Frontignan: which see.

Muscat Rouge de Madère.—A synonym of Madeira Frontignan: which see.

Muscat Trovéren.—A synonym of Trovéren Frontignan: which see.

Muscatellier Noir.—A synonym of Black Hamburgh: which see.

Œillade Noire (4).—An oval black Sweetwater Grape. *Synonyms:* Mihaud du Pradel, Malvoisie Noire, Œillade, Œillade Noire Musqué, Œillade Noire Précoce.

Vine.—Growth moderately robust, the shoots at times not ripening well; moderately fruitful.

Leaves medium size, deeply cut, dying off reddish, when they have a very pretty appearance.

Fruit.—*Bunches* above medium size, on long stalks, very loose, and producing long loose shoulders; freely set. *Berries* above medium size, long ovate. *Skin* thick, jet black, with a fine bloom, bearing a striking resemblance to the Muscat Hamburgh. *Flesh* melting, sweet, and exceedingly pleasant.

History, &c.—Received from M. Leroy, of Angers, and grown in the collection of the Royal Horticultural Society at Chiswick, and from thence distributed.

Cultural Notes.—It will succeed in any ordinary vinery.

Season.—Mid-season: is not suited to hang long.

Merits.—Second-rate.

OLDAKER'S WEST'S ST. PETER'S.—A synonym of West's St. Peter's: which see.

OTTONEL (67).—A round white Muscat Grape. *Synonym:* Muscat Ottonel.

Vine.—Growth slender, but free; very fruitful. *Leaves* small, roundish, dying off early pale yellow.

Fruit.—*Bunches* small, short, cylindrical, well set. *Berries* small, round. *Skin* thick, greenish-yellow. *Flesh* peculiarly dry, yet tender and very sweet, with a strong Muscat flavour.

History, &c.—Received from M. Leroy, of Angers, and fruited at Chiswick.

Cultural Notes.—Excellent for pot-culture in orchard-houses, and ripens freely on the open wall in ordinary seasons.

Season.—Very early.

Merits.—Third-rate; but valuable, on account of its earliness and hardiness.

PALESTINE.—A synonym of Syrian: which see.

PARSLEY-LEAVED.—A synonym of Clotat: which see.

PITMASTON WHITE CLUSTER (30).—A round white Sweetwater Grape.

Vine.—*Growth* moderately robust; very free and hardy constitution, and very fruitful. *Leaves* small, roundish, dying off yellow.

Fruit.—*Bunches* small, but rather long, compact, always well set. *Berries* small, roundish. *Skin* thin, clear, pale-greenish, becoming whiter the more fully ripened. *Flesh* melting, tender, juicy, and sweetly flavoured.

History, &c.—A variety introduced by Mr. Williams, of Pitmaston; it used to fruit freely on the old peach wall at Chiswick.

Cultural Notes.—Ripens freely on the open wall in good seasons, and is also very suitable for orchard houses.

Season.—Very early.

Merits.—A nice early hardy grape, and valuable on that account.

POPE HAMBURGH.—A synonym of Black Hamburgh: which see.

PROLIFIC SWEETWATER (31).—A round white Sweetwater Grape. *Synonym:* Gros Coulard.

Vine.—*Growth* moderately robust, with fine, free constitution; fruitful. *Leaves* roundish, much toothed, dying off yellow.

Fruit.—*Bunches* small, somewhat loose and irregular, thinly set. *Berries* medium-sized, round. *Skin* very clear and transparent, greenish-white. *Flesh* very tender, juicy, rich, and pleasant.

History, &c.—Our first acquaintance with this grape was in the collection of Messrs. Rivers. We have also fruited it at Chiswick.

Cultural Notes.—Excellent for pot-culture, and succeeds well in a cool orchard-house.

Season.—Early.

Merits.—First-class. A great improvement on the old Sweetwater, and sets more freely.

QUEEN VICTORIA.—A synonym of Royal Muscadine: which see.

RAISIN DE CALABRE.

RAISIN DE CALABRE (95).—A round white Vinous Grape. *Synonym:* Calabrian Raisin.

Vine.—Growth very free and vigorous, with fine constitution, the young shoots being moderately strong, somewhat long-jointed, and with pale clean bark; very fruitful. *Leaves* medium size, rather deeply toothed, dying off and falling very early, a very pale yellow.

Fruit.—*Bunches* long, from 12 to 20 inches, somewhat loose, tapering, slightly shouldered, on long woody stalks. *Berries* above medium size, quite round, freely set, but never crowded, on very strong foot-stalks, which on pulling the berry off retain a portion of the flesh. *Skin* whitish, almost transparent, showing the seeds through. *Flesh* thick

and firm, with a sweetish but by no means rich flavour.

History, &c.—Received by the Horticultural Society from Messrs. Baumann, of Bolwyller, and described by Thompson in the *Journal* of the Society, in 1846. Is still grown in the great Grape Conservatory at Chiswick, but is not generally to be met with in gardens. In some parts of the country, the name of Raisin de Calabre has got applied to the Trebbiano; and the large bunches grown by Mr. Curror, of Eskbank, under that name, were in reality Trebbiano, the berries of which are slightly ovate.

Cultural Notes.—Will succeed in any ordinary vinery, and requires no special care. Best suited for a late house, the berries keeping remarkably plump and fresh until late in spring.

Season.—Late, from January to March.

Merits.—Third-rate in quality, but very pretty and valuable for its late-keeping qualities.

Red Chasselas.—A synonym of Chasselas Rose: which see.

Red Frontignan.—A synonym of Grizzly Frontignan: which see.—A. F. Barron.

Jura Frontignan.*

* [Readers are requested to substitute the above figure of the Jura Frontignan for that given by mistake at p. 131, which represents West's St. Peter's.]

MATRICARIA INODORA FLOREPLENO.

THIS is one of the most useful of autumn-flowering plants, alike desirable for the purpose of enlivening the flower-borders, and also for supplying cut flowers. The plant is tolerably hardy, as it stood 10° frost with us on the 14th October, and did not appear to be affected by it in the least. From cuttings taken in August, potted as soon as rooted, the plants being shifted on and grown in a cool frame, we hope to be able to cut a few blooms during the greater part of the winter, with which object we shall keep them growing in a cool frame, where we can exclude frost, and keep the temperature from getting too low.

Single composite flowers are coming greatly into favour now. The white *Chrysanthemum frutescens* and the yellow Etoile d'Or are much liked for cut flowers; and when grown well in pots, neither of them are to be despised at this season, as a help towards decorating the stages of the conservatory. At this dull time, moreover, they assist for a long period in filling the cut-flower basket. If treated the same as the other sorts throughout the season, they come earlier into bloom. Our few plants have been in blossom since Midsummer, and are good yet.—A. Henderson, *Thoresby*.

SPRING CAULIFLOWERS.

THESE have been rather scarce the last few seasons, owing to the severity of the weather. To have nice Cauliflowers fit for use about the end of May and beginning of June, a quantity of the best plants from the August-sown beds should be potted at once. It were better had this been done at the beginning of last month, although it is not too late yet. They should be potted in 48-sized pots, using a compost of loam and rotten dung. When they are potted, they should be stood in a cold frame or pit, and placed near to the glass. The frame or pit should be kept closed for about three weeks until they begin to make roots into the fresh soil; they should then have air given, every day the weather permits. When they begin to make roots, they should have a nice watering, to moisten the soil; but they will not require any more for some time. In frosty weather, they should be kept well covered up.

Besides this covering-up and air-giving, nothing further will be necessary to be done, until about the early part of February, by which time they will begin to fill the pots with roots. The whole of the plants should then be potted into 24-sized pots, using a nice loamy soil, with plenty of rotten dung in it. When they are all potted, they should be put into a vinery just started, where they will have a little heat, just sufficient to start them into growth.

About the first week in March they will be good plants, and should be removed to a cold frame or pit, to be hardened off, previous to planting them out. After being in the frames a few days, advantage should be taken of favourable weather to plant them out on a sheltered border, in rows two feet apart, and the plants two feet apart in the rows. Some of the best plants may be planted at the foot of a south wall; these will come into use some days before the others. After they are planted out, they should have a good watering, if the soil be dry, and occasionally afterwards, if the weather be dry; beyond this, no further attention will be necessary. Towards the end of May, those by the foot of the south wall will begin to form their heads, and in the early part of June those in the sheltered border will begin to turn into use.

This mode of culture is not so generally adopted as it deserves. I have followed it for several years, and I find it requires less care and attention, and gives more satisfactory results, than any other plan I have seen or adopted. There is one point of some consequence to be attended to, and that is, to have a good strain of Cauliflower. Much of what is sold as London Cauliflower is very disappointing.—M. SAUL, *Stourton.*

OSMUNDA REGALIS
PROLIFEROUS.

IS it generally known that Osmunda regalis var. cristata is proliferous? I bought a smallish plant in July last year, with fronds from 6 in. to 9 in. long, and I observed that each one had a slight bend in the middle of the rachis, and having *in* the bend a slight pointed protuberance, when the frond was young. As it got older, it assumed more the appearance of a crown. I took one of these bulbils off (with about an inch of rachis on each side), and put it with a few seedlings under a bell-glass; and though the part of the rachis that was with it decayed, it remained green all through the winter, and in spring showed symptoms of sending up fronds. I pinned all the others down to the pot, *à la* Polystichum angulare proliferum; but they all seemed to die down with the frond; so I think that the best plan is to cut them off while the parent-frond is still in its full vigour. Are the larger plants proliferous?

I have what I think to be two separate and distinct forms of Osmunda regalis. In one of them, the frond seems to come from the very centre of the root-stock; while in the other there seems to be a winged arrangement, formed by the bottoms of old fronds, from which one can see the fronds come up. The little cristata is of this latter form.

I divided the crown of the Osmunda regalis var. cristata (it was a double one) in the early spring, and so the growth has been delayed a little. One plant is only just showing, and I can, as yet, form no opinion on it; the other has sent up four fronds, only one of which exhibits the characteristics above described, but I have hopes that the future fronds will do so, as last year the four first fronds had nothing of the sort, while all the other nine had the little bulbs. Last autumn I pinned down all the fronds but one in the pot in the usual way, and the buds all died with the fronds. The one I cut off about a quarter of an inch above and below the bulb, and pinned down under a bell glass, has sent up three miniature fronds. —O. FIRTH, *Langley Bank, Baildon, near Shipley.*

P.S.—I have but just returned from abroad, and find only one of the divided plants remaining. It has twelve fronds, still green; and of these, three exhibit proliferous symptoms. One has a bulb nearly at the base of the stipes, which is sending off three small fronds; one has a very small bulb, just *above* the first pair of pinnae, and the third has it, in what I take to be the ordinary position, about the middle of the stipes.—O. F.

Tomato Trentham Early Fillbasket

THE TRENTHAM EARLY FILL-BASKET TOMATO.

[PLATE 552.]

IN very few cases has the cultivation of a particular kind of fruit developed with us so rapidly as that of the Tomato has done within the last eight or ten years. Before that period, Tomatos were grown in this country only as a summer crop, either against a south wall, or rarely in very sheltered situations in the open quarters; but now, for some time past, they have been afforded glass accommodation, the crops have been grown in succession as continuously as those of the Cucumber, and the fruit has become regarded almost as a necessity of daily requirement throughout the year. Some persons, indeed, affect to dislike them; but it is evident that a much greater number eat them with avidity and relish, and the consequence is that large quantities are grown and consumed, not only in private families, where they are specially cultivated for home use, but also by that larger family, the public, which obtains its supplies through the open market. So great, indeed, is the demand, that Tomatos are found to be a very profitable crop to cultivate for market purposes.

Tomatos, it is well known, form an excellent pickle while the fruit is still green, but it is not so generally known that the green, unripe fruit makes a preserve of a distinct and agreeable character. Hence, the immature green fruits of the outdoor crops may all be utilised; though if gathered without bruising or other injury, and laid in a warm place, such as the shelves of a well-appointed kitchen, those which are half-grown and upwards will, most of them, gradually ripen and acquire their natural red colour. The ripe fruits may be made into various delicious sauces and ketchups, besides being eaten either raw or cooked in a variety of ways. "Used as an article of diet, they are considered beneficial in affections of the liver, indigestion, diarrhœa, and other complaints" (*Treasury of Botany*).

With the advance of the Tomato in public favour, there has been a corresponding advance in the merits, and an increase in the number, of varieties grown. In this matter the Americans have assisted us—for the Tomato is held in very great esteem in the United States, as it is also in the South of Europe—and we have now not only red and yellow-fruited sorts, but varieties of every size and character, from ribbed to smooth, and from the monster Trophy and Goliath to the diminutive Cherry and Currant Tomatos. Of course, while this increase in numbers has been going on, the special merits and demerits of particular sorts have been noted, and the good qualities of the fruit as a garden crop have been formulated, until it comes to pass that the best Tomatos, those most sought after by cultivators, combine such qualities as early fertility, productiveness, successional bearing, and a free, healthy, and vigorous, but not over-luxuriant habit of growth—not soon wearing out, not producing a glut of fruit and then failing, not bearing fruit of monstrous size in limited numbers, and not growing on indefinitely without yielding fruit at all. These latter qualities are avoided, and those sorts are chosen in preference in which the main characteristics are earliness, productiveness, and continuity of cropping. None of the sorts which we have yet fallen in with, exhibit these qualities combined in so great a degree as the variety figured in the accompanying plate, which is to bear the distinctive name of the Trentham Early Fillbasket Tomato.

This novelty was raised by Mr. Stevens, gardener to his Grace the Duke of Sutherland, at Trentham Hall, Staffordshire. The American variety named Criterion is its mother parent, and Trophy its male parent, and it has combined the fine flavour and bright colour of its father with the productiveness of its mother in an enhanced degree, while the earliness and continuous cropping have been special gains resulting from the union. It is a handsome, deeply-coloured variety, of a fine crimson hue, the fruit being of medium size, and roundish-oblate in form, without ribs; while the plants are wonderfully prolific, as they set fruit freely at every joint, and come into bearing a month earlier than Trophy, owing to its precocious-flowering and quick-setting character. We have had more than one opportunity of seeing the plants—whole housefuls of them—growing at Trentham during the past season, and they presented quite a glowing picture, so thickly were the trellises on which they were trained hung with the brilliantly-coloured fruit. We have also had ample opportunity

of testing the quality of the fruit, and have found it one of the best of all the Tomatos, with a full piquant flavour, both in the raw and in the cooked state. Indeed, in respect to flavour it is quite equal to its male parent, Trophy, which is undoubtedly a grand variety, but which is not so desirable as the Trentham Early Fillbasket, inasmuch as it is neither so early nor so continuous a bearer. We have counted, not once, but often, on the stems of this latter sort, trained straight up the roof trellis, a succession of eight to ten clusters of fruit, in various stages, produced one from each successive joint, those at the base full grown and perfectly ripe, and those above them passing through the various gradations of swelling and colouring, the uppermost clusters being just set, or still setting their flowers.

We anticipate that the Fillbasket will entirely supplant the Old Red Tomato for market-gardening purposes, as its earliness and free-setting qualities, when planted out of doors, will be a welcome property to the grower; and the beauty and smoothness of its large, brilliantly-coloured fruits will command a much better price than can be obtained for the coarse-ribbed old sort. We, therefore, commend the Fillbasket to the notice of those of our market-gardening friends who are in the habit of growing Tomatos in the field for summer and autumn use; and have no doubt it will be found by them a valuable acquisition, as it will also by those who grow these fruits under glass throughout the year.—T. MOORE.

WINTER TREATMENT OF STRAWBERRIES IN POTS.

I SUPPOSE that the old method of building up Strawberries for forcing in pots on their sides, in the form of pyramids, to keep them until such times as they are wanted for taking into the forcing house in winter or early spring, is one that is fast dying out. I presume it was done to assist in ripening the crowns and in developing flowering stems.

At Gunnersbury Park, Acton, Mr. J. Roberts, whose capacity as a successful practical gardener is most strikingly proved in every department of the garden, adopts an altogether different mode of wintering his Strawberry plants in pots. He plunges the pots in cocoa-fibre, in slightly sunken beds in the open ground, and covers the pots entirely with the same, leaving only the leaves visible. One could not well desire to witness better plants than those to be seen at Gunnersbury Park. A slight, wooden framework is placed along the beds, in the form of an unglazed roofing, and over this mats or some such covering can be thrown, or wooden shutters placed against it, to ward off heavy rains, snow, frost, &c.

Under this method, there is no pause in the development of the plants—no "period of rest," as it is termed; they are continuously growing, and when they are taken into the forcing-house, they are already in active movement. Mr. Roberts tests his plan by results, and they are so satisfactory that the old practice of laying the pots on their sides at Gunnersbury Park is, as far as Mr. Roberts's administration is concerned, numbered with the doings of the past.—R. DEAN.

EUCHARIS AMAZONICA.

THIS, when planted out, gives a larger return of flowers, of finer quality, and with less labour and attention, than when grown in pots. It requires a pit, with enough of piping to maintain the required temperature. In this put a good depth of leaves, in order to keep up a brisk heat,—or if hot-water pipes for bottom-heat can be had, so much the better; place over them six inches of good rich loam, rather free, in which plant the best bulbs, at four inches apart every way. After planting, give a good watering with tepid water, when, with daily syringing, growth will soon commence. If the bulbs are good, most likely flower-spikes will, with proper treatment, make their appearance as soon as leaves, and, all going on well, other young leaves will soon follow them. When the roots have begun to take fair hold of the soil, let all the waterings be of weak liquid manure, as they are fond of feeding. We find that liquid from cow-manure and soot suits them well. With this treatment, they bloom on for a long time, and large and fine spikes are produced.

After the flowering is fairly over, withhold water a little, and keep them drier in the atmosphere, but not too much so. If they are in a pit by themselves, drop the temperature also for a few weeks, when, by lifting all, selecting again the largest bulbs, replanting, and following the same course of treatment, equally good, if not better, blooms will be obtained. When grown in this way,

the bulbs get much larger and finer than when they are kept in pots.—A. HENDERSON, *Thoresby.*

THE BELLADONNA LILY.

THE *Amaryllis Belladonna*, or as it is generally called, the Belladonna Lily, is a very ornamental garden plant, producing its beautiful flowers, which are of a delicate soft rose colour, about the end of September or beginning of October, and continuing in bloom, if the season be favourable, for a month or more. It is said to have been imported from Portugal, but is a native of the West Indies, where it is found by the side of mountain streams in partially shaded places. It was introduced in 1712, and has always been a special garden favourite. It is generally found in gardens planted close to the walls of plant-houses, where it obtains warmth and

shelter. It bears its beautiful flowers on footstalks about 2 feet high. To cultivate it successfully a south-west aspect should be chosen, and the border well trenched to the depth of 2 feet or 2 feet 6 inches; a layer of good rotten dung to the depth of about 6 inches should be placed at the bottom, the soil replaced to within 9 inches of the surface, at which depth the bulbs should be planted 6 or 8 inches apart, and then covered over by filling up to the former height of the border. If the soil should be retentive, a considerable quantity of sand and well-decomposed manure should be added to it. The bulbs should be covered over in winter with cocoa-nut fibre or tanner's bark, 3 or 4 inches thick, to protect them from frost. —G. EYLES, *Lesham Villa, Kew.*

SUBURBAN GARDENING.

DECEMBER.—What mild, pleasant, summerlike weather characterised the second week in November! It was so balmy and soft, that it seemed as if a remnant of summer had been left to us. It has been rare weather for the gardener and farmer, for they have been enabled to get in their autumn sowings, clean the land, engage in planting, and do all out-door work with pleasure and comfort. It seems as if summer would last on till the new year, but how often is it that winter lasts on to summer! It appears as if the seasons of spring and autumn were fading away from us.

Kitchen Garden.—The roots of *Asparagus* may be taken up at intervals, and placed on a slight hot-bed. Those who are starting an early vinery into growth can make up a good forcing-bed for Asparagus, by making the framework of one from boards, hurdles, &c., in the vinery, filling it with leaves and hot dung, placing a few inches of soil on this, and then the roots, covering them with a layer of soil; a supply of good Asparagus can thus be obtained, and the exhalations from the bed help the development of the vines. If beds of Asparagus in the open ground have not been dressed with well-rotted dung and soil, they should be so treated at once. Some more *Seakale* should be covered with pots, to cause it to grow, filling up around them with leaves and warm dung. It will be ready for cutting in about five or six weeks. *Cabbage Plants* may still be put out, to give a second crop in spring. *Winter Spinach* and *Winter Onion* beds should be kept clear of weeds, and as far as it can be done, the soil kept stirred among the plants. It is best to plant the Cabbage in drills, a little deep, as the hollows prevent the plants from being blown about by the wind. *Broccoli* that has headed in may be protected from injury from frost by undermining the plants, and forcing them down towards the north, the heads nearly close to the ground, by which means the plants shelter each other. In case of very severe weather, some long litter can be thrown over the heads. The forwardest plants of *Endive* should be taken up and planted in a cold frame, removing with good balls of earth, to nourish the plants. *Celery* should still be earthed up, if needed.

Fruit Garden.—Newly-planted trees should be mulched over the roots, as there is no knowing when the present mild weather may change to sharp frosts. All new-planted standard trees should be firmly secured to stakes, so that they be not blown about by the wind. All planting should be done without delay, as it often happens that if delayed beyond Christmas, the weather proves unfavourable, and

work cannot be proceeded with until early spring; and if a dry time sets in, as sometimes happens, it is difficult to get the trees well established before the hot weather comes. *Strawberry Plants* potted up for forcing should be plunged in cocoa-nut fibre, and protected in bad weather; this is a better practice than the old-fashioned one of putting the pots on their sides in pyramids, and so keeping them through the winter. *Pruning* and *Nailing* should be proceeded with in favourable weather. *Orchard trees* should be gone over, and any branches that cross each other cut away.

Flower Garden.—In this department of the garden, operations may be said to be in a state of suspense. All *Flower-beds* not required for spring flowers should be dug, and the soil laid up rough for the winter. While the weather is fine and open, the beds planted with bulbs should be gone over, and the surface-soil gently stirred. As soon as frosty weather sets in, a mulching of short dung and leaves will be found very beneficial. Preparations should be made for the protection of any tender plants against walls, &c., for soft and balmy as the weather is now, there is no knowing how soon ice and snow may be our visitants. All things needing pruning should have this operation performed. Any alteration required in the garden should be carried out at once; and the grass-plots and walks kept neatly swept and rolled.

Cold Frames.—As the season advances towards mid-winter, the usefulness of the cold frame as a nursery for plants becomes more apparent. Some things are now coming on into flower, among them the *Christmas Rose.* We have now some fine plants, throwing up some 20 to 30 flower-stems each. The plants, when they have done flowering, are in early spring planted out in a bed of loam under a warm wall; here they make root freely, and grow into size. Early in October, the plants are lifted and potted, put into the cold frame, and at the end of November taken into the greenhouse. They are objects of great beauty at Christmas. Such useful things as *Triteleia uniflora*, *Crocus speciosus*, *Polyanthuses*, *Primroses*, &c., are now coming into flower, and as soon as they show signs of doing so, are placed in the greenhouse. By a judicious selection, it is comparatively easy to have a succession of useful hardy plants in bloom through a good portion of the winter. Plants going to rest, such as *Funkias*, and other herbaceous subjects, should be kept slightly moist only; any growing plants need to be kept watered more freely. Air and cleanliness are the two main points in successful culture at this season of the year, and so long as the weather keeps as mild as it is while we write, the lights can be removed altogether during the day.

Greenhouse.—In houses where some hot-water apparatus is provided, there is no difficulty in keeping up an attractive display. In the absence of any plants requiring a good amount of heat, only a little fire at night is required; but air should be given when it is applied. *Epacris*, *Heaths*, *Camellias*, *Cinerarias*, *Primulas*, *Cyclamens*, some of the new *Salvias* of recent introduction, winter-flowering *Begonias*, &c, will now be making the house gay and pleasant, and never is a little flower more valuable than at the dead season of the year. In the cold house, such things as the cold frame can supply will be found very useful; and there are some hardy-foliaged plants that are of great service during winter, for keeping an unheated house furnished, such as *Aralia Sieboldii*, now in full flower; *Veronica Andersoni*, and its variegated variety; *Agave americana*, *Indian Azaleas*, *Megaseas*, *Eupatorium riparium*, *Dwarf Scabious*, and others too numerous to mention. It is surprising what can be done in the way of effectively furnishing a cold house, by any one who lays himself out for the purpose. Air should be given in mild weather, but the house kept close while it is dull, cold, and foggy. On a mild, sunny day, with drying winds, a gentle syringing overhead may be given with advantage, but early in the day. Nothing should be watered but such as absolutely requires it; and if it is necessary to do this in dull, cold, foggy weather, it is best to immerse the pot in a pail of water, and allow it to drain into the same, so that as little wet as possible may be left on the floor or shelves of the house. *Chrysanthemums* are still gay, and they require all the air that can be given them while the weather is fine.—SUBURBANUS.

GARDEN GOSSIP.

IN a little book entitled, FRUIT FARMING FOR PROFIT, Mr. G. Bunyard, of the Maidstone Nurseries, discusses a most interesting subject, bearing on one of our most important national industries. Fruit is food, and when properly used, is food of the most nutritious and wholesome character; and consequently as food-produce, our fruit crops have no small influence on our national prosperity. True, we have of late years had successive adverse seasons, and the popular verdict has been inclining to the conclusion that fruit-culture is precarious at best, and often wholly unremunerative; but the author of this treatise takes an opposite view, and argues that, under proper conditions of land-tenure, a good return may be expected. He says:—"If plums are planted, many tenants would reap a good profit, and recover their outlay in a 14 years' lease; and still greater, if raspberries, currants, and gooseberries are planted; but in the case of apples, pears, and cherries, although the two former can now be had to produce fruit very soon, it becomes more of a landlords' question, and probably some arrangement could be made for the landlord to do all the work, the tenant

paying an interest on the outlay." And again, as affecting another class, he observes:—"Looked at socially, fruit-growing is a very important gain for the labouring classes." Mr. Bunyard goes very closely into the practical part of the question, and inculcates the doctrine that "in market-growing for profit, we shall have to grow such kinds as will pay, and also send to market fruit, as we think, in a very unripe condition;" and he also reminds his readers of the immense quantity of fruit which is manufactured into jam, the growth and gathering of which, while it finds employment for the labouring population, brings a handsome return to the fruit farmer. Besides the general questions of soil, shelter, culture, planting, pruning, &c., the different kinds of hardy fruits are treated on in separate chapters, in which a body of useful information will be found. Mr. Bunyard's advice is to "plant fruit trees;" and this manual tells how, and when, and where to do it, the kind of trees to plant on particular soils, and the prices that may be and are realised for the produce. From these figures, the reader is led to infer that fruit-growing pays, though the author tones down his statements, by observing that, "although fabulous prices are made, the seasons for two or three years may be adverse, and actual loss may be incurred;" but then, "the average prices realised are very regular, as the higher prices in a scarce year compensate for deficient quantity." We believe this is a little book which may be recommended to the serious consideration of all persons who are interested in the beneficial cultivation of our native soil, as a fair, and certainly not unfavourable, exponent of the subject to which it is devoted.

— Considerable attention is being paid to the subject of Forest Destruction in Australasia, a question of paramount importance to the Colonies, not only as regards the supply of timber, but as affecting very materially the rainfall and water supply. In New Zealand, the Kawri pine is being fast exterminated. Dr. Hector has pointed out that the average annual destruction of the New Zealand forests, during the thirty-eight years terminating in 1868, was at the rate of 23 per cent.; while, in the succeeding five years, 20 per cent. in addition was destroyed of what remained. In Victoria, New South Wales, and South Australia, the evils arising from reckless and wholesale deforestation are beginning to make themselves felt in increased dryness of climate, longer droughts, and more numerous bush-fires. A proposal has been made in South Australia by Mr. Goyder, the Surveyor-General of the Colony, to carry out a systematic course of tree-planting, by reserving a block of 200,000 acres, and spending on it £14,500 during the first year, and £10,500 during each of the following eleven years, thus making the expenditure £130,000, by the time that the whole 200,000 acres were properly fenced in and planted. During the first five years there would not be any revenue, but in the succeeding ones the returns from periodical thinnings might be estimated at £35,000 per annum, until the end of the twenty-first year, when the colony would be in possession of 200,000 acres, or 310 square miles, of forest. This scheme might probably be successfully modified, by making the areas smaller, and increasing their number, so as to admit of dispersing them in different localities, which would exert a more beneficial influence on the climate and rainfall of the interior.

— Two meetings have this year been held at Chiswick for the Trial of Potatos. At the first meeting, the Committee highly approved the following varieties for their cropping qualities and handsome appearance:—Lye's Prolific, Garnett's Seedling, The Druid, No. 1 (Fenn), No. 3 (Fenn), Avalanche, Alderman, No. 6 (Fenn), Surrey Gate-post, Beauty of Kent, Farren's No. 1, Foster's Seedling, Standard (Fenn), Lord Mayor, American Seedling, Bedfont Prolific, Matchless, White Emperor, Criterion, Manhattan, No. 5 (Fenn), Mr. Bresee, Alpha, Triumph, and No. 30 Rand's Seedling (Bliss); and they awarded First-class Certificates to the following, on their being subjected to the test of cooking:—Garnett's Seedling, a large flat white kidney; Standard (Fenn), a medium-sized round white; Lord Mayor (Dean), a very handsome rough-skinned white; Foster's Seedling, a large white round rough; No. 5 (Fenn), a large, very handsome pale red kidney, resembling Mr. Bresee, remarkably fine in quality; Matchless (Bliss), a half-round, very handsome pale-pink American variety.

— At a subsequent meeting, held on November 3rd, several further Potatos were selected as good cropping, very handsome, and distinct kinds, and on being cooked, the following awards were made:—First-class Certificates to, —Fortyfold White (Farqnhar), large round white; Vermont Champion (Bliss), large round white; Queen of the Valley (Bliss-Hooper), large and oblong pale pink; Adirondack (Bliss-Hooper), medium round white, tinged pink; Brownell's No. 11 (Bliss), large roundish white; Victoria Kidney (Edwards), large flat white; Rand's No. 30 (Bliss), large oblong white; Rand's No. 12 (Bliss), large long flat white. Second-class Certificates to:—Criterion (Ross), round white; Sir Walter Raleigh (Ross), large round white; Trophy (Bliss), large kidney-shaped red; Vicar of Laleham (Dean), large round purple; White Elephant (Daniels), large long flaked; Victoria alba (Donaldson), large round white, purple eye; St. Patrick (Daniels), large long white. We do not see what is wanted with second-class varieties.

— One of the most strikingly handsome of the now fashionable Single Dahlias, is Mr. Ware's White Queen, which may be described as of dwarfish, spreading habit, about three feet in height and nearly as much across, compactly branched, and producing a great abundance of flowers. The *Garden* mentions a plant, of which a woodcut figure was given in that journal, as having had 175 buds and expanded flowers upon it. The flowers are somewhat nodding, of large size, with a well-developed ray of broad, white florets, which are most attractive, either when seen closely or from a distant part of the garden. In the cut state, they last in good condition for three or four days, if placed in a cool room. From its conspicuous character, it is well adapted for large beds on lawns, or for masses in any prominent arrangement of autumn flowers, where the bulk of the plant admits of its being appropriately introduced.

— In reference to Calanthe Veitchii, Mr. H. Knight (late of Floors, now of Greenlands, Henley-on-Thames) draws attention to the great difference there is between the two varieties which are in cultivation, the dark, rose-pink variety being much superior to the lighter one, which latter he has found to be a more delicate grower. The inferior sort is easily distinguished by a sudden contraction which occurs about the middle of the pseudobulb. No more lovely or effective flowering plant for decorative purposes can be desired, or

ean be had, at mid-winter, than this beautiful *Calanthe*, which our gardens owe to the sueeessful efforts made by Mr. Downing to hybridise this raeo of plants.

— In order to improve the quality of some of our best WINTER PEARS, Mr. Sheppard, of Woolverstone, suggests planting on the north side of the wall, and earrying the branches over to the south side. "I generally find," he says, "that our finest fruits are those gathered from braneh es that overtop the wall, and hang on the eoping looking to the south-east, where, getting more sun, the erude juiees are eonverted into saccharine matter." This result, indeed, has often been observed by others. Mr. Sheppard adds:—"I was mueh struck by a remark made by Mr. Creswell, the intelligent gardener at Stoke Park, about planting Pear trees on north walls, and running them over and down the other side; and he pointed to some he had trained in that way, which were bearing high-coloured, splendid-looking fruit." Many persons, he thinks, may ask why, if Pears are to grow on south walls, they are not planted there? But the advantage of having the roots in a more shady and moist border is great, as there they are not likely to suffer from want of water, and the south side would still be at liberty for Peaches and Apricots, which may be trained to fill the lower part of the wall, or the Pears could be led cordon fashion along the top as a sort of eoping.

— THE new ROSE THOMAS GERRARD originated with Mr. G. C. Garnett, an accomplished rosarian, residing near Dublin, and will be propagated and distributed by Messrs. Keynes and Son, of Salisbury. It is a sport, and the following is its history:—In July, 1878, a dwarf standard of Letty Coles, herself a sport, was budded with Niphetos; the bud did not push, but remained dormant during the winter. In the spring of 1879 it produced a shoot, which ultimately died away. The blooms of that year and 1880 were those of Letty Coles, very fine, but true to colour and eharacter. In April, 1881, a strong shoot appeared, producing two flower-buds, which, when fully developed, were both parti-coloured or piebald, the colours white and salmon-rose. After Mr. Garnett had eut away the wood to forward for propagation to the Messrs. Keynes, a second sport of three blooms appeared, all rose-coloured, and only one showing the colour and perfection of the first sport. Some of the most noteworthy roses in cultivation have resulted from cross-budding. Marshal Niel, the finest of all yellow roses, it is said, originated in this way; a bud of Cloth of Gold was inserted on wood of the American Isabella Gray, the result of the union being the famous Marshal Niel. Then, again, Mabel Morrison was produeed from bud variation produced through the inoculation of Baroness Rothschild with Niphetos. Belle Lyonnaise is the outcome of Gloire de Dijon budded with Celine Forestier. Finally, Letty Coles herself is a bud sport from Madame Willermoz.

In Memoriam.

— MR. JOHN REID, formerly gardener at Haigh Hall, Wigan, died at Appley Bridge on October 11th, aged 70 years. Mr. Reid was was born in the parish of Erskine, and at an early ago was apprenticed under Mr. Shields, gardener to Lord Blantyre, at Erskine House, whence he removed to Cawdor House, and thence to Woodhall (Campbell of Islay's), then one of the most extensive places in Scotland. After three years, he was appointed gardener to the Lord Justice Clerk (Hope), at Granton House; and afterwards entered the service of Professor Syme, near Edinburgh; that of the late Marquis of Huntly, at Orton Hall; and that of the present Dowager-Countess of Crawford and Balcarres, at Haigh Hall, where he completely remodelled the grounds, as well as made extensive additions to the gardens.

— GEORGE CURLING JOAD, Esq., of Oakfield, Wimbledon Park, died on October 24th. Mr. Joad was comparatively little known outside his own immediate circle of friends, but he loved plants, and not only knew them, but cultivated them well. His garden was richly stocked, and so varied in arrangement, that while herbaceous and alpine plants had special attention, no other department was neglected. Mr. Joad's garden was, indeed, one of the most interesting in the neighbourhood of London.

— MR. ALEXANDER INGRAM, gardener to the Duke of Northumberland, at Alnwick Castle, died on November 5th, after a very short illness. He was born in Aberdeenshire in 1821, and commenced his career as garden boy at Piteaple Castle, whence he left for Haddo House; and from thence moved successively to Newby Hall, Yorkshire; Moor Park, Herts; and Messrs. Knight and Perry's nursery, at Chelsea. In June, 1854, he was sent by the late Mr. James Veitch, to Highgrove, Reading, then the residence of the late J. J. Blandy, Esq., in whose service Mr. Ingram proved himself to be a clever cultivator, and a successful exhibitor of choice plants and fruits. In October, 1867, after Mr. Blandy's death, Mr. Ingram became gardener at Alnwick Castle, the gardens of which he almost entirely remodelled.

— JOHN DENNY, Esq., M.D., died on November 18th, at his residence, the Dispensary, Stoke Newington, from a second attaek of paralysis. Dr. Denny has long been known as a breeder of high-class Zonal Pelargoniums, single and double, many of his varieties now occupying a prominent place in our collections. An account of his *modus operandi*, from his own pen, will be found in our volume for 1872, pp. 10, 34, 50. In 1875 he was elected on the Council of the Royal Horticultural Society, on which he has continued to hold a seat ever since. He was, conjointly with the late Mr. John Pearson, the founder of the Pelargonium Society, which has done so much to foster the development of that popular flower, and the successful career of which has been much influenced by his active energetic Treasurership, which he only resigned last year. As a kind-hearted, genial friend, and an uncompromising and instinctive supporter of the true interests of gardening, he will be greatly missed, as well as deeply regretted by those with whom he was associated in horticultural work.

*** It is intended to make the FLORIST AND POMOLOGIST AND SUBURBAN GARDENER also a REGISTER OF GARDEN NOVELTIES, including *New Plants*, *New Flowers*, *New Fruits*, and *New Vegetables*. In order to make this Register as perfect as possible, we shall be glad to receive from our correspondents notes of any such subjects which we ourselves may not be likely to fall in with.