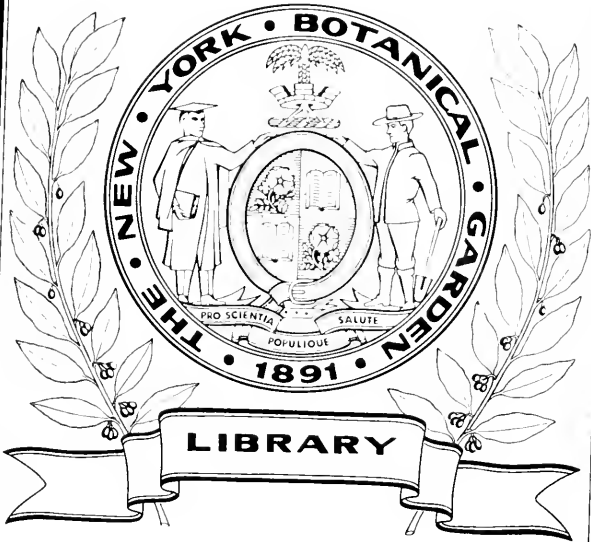


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THE
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AND

G A R D E N G U I D E.

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VOLUME IV.  
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LONDON:
GROOMBRIDGE AND SONS,
5, PATERNOSTER ROW.
1861.

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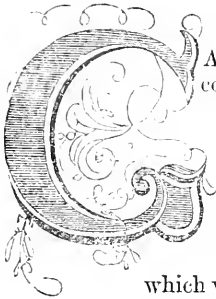
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JANUARY, 1861.



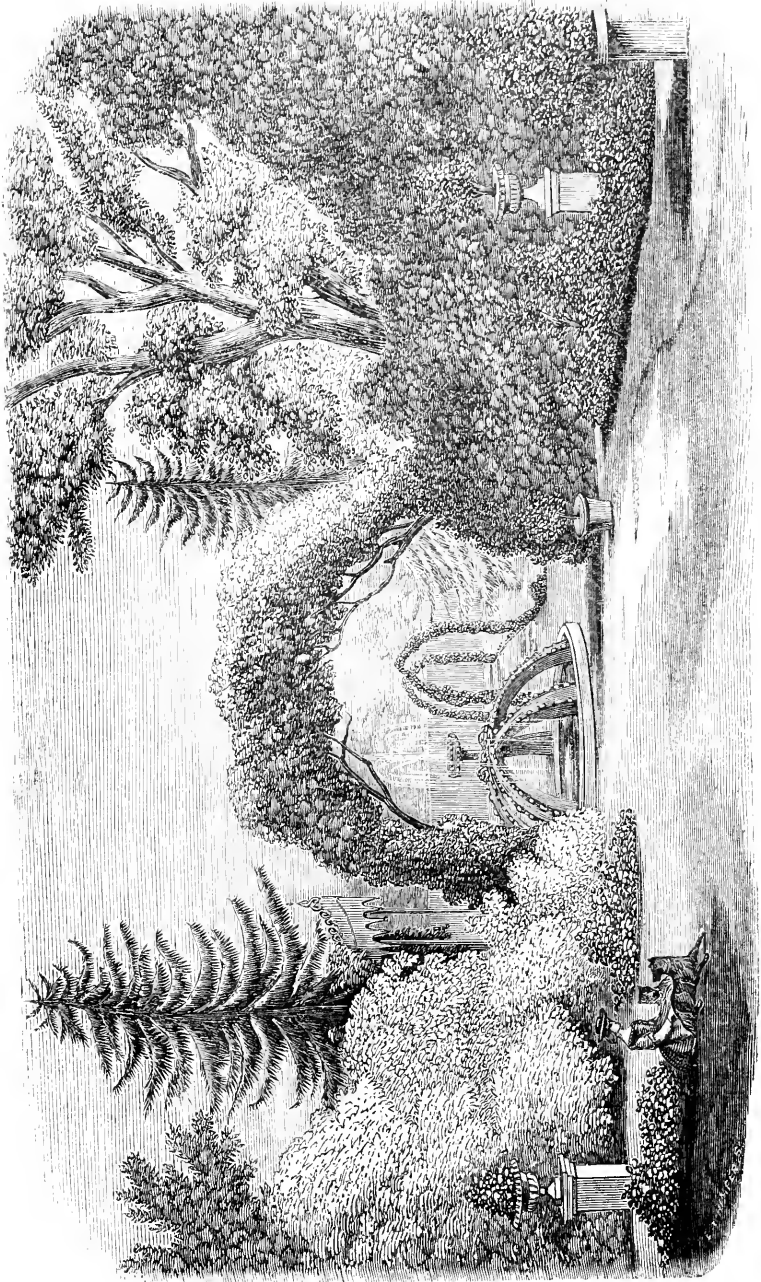
GARDEN SCENES have improved in their composition considerably during the last half century, partly under the influence of what we may term fashion, still more under the teachings of correct taste, and not a little in consequence of the successive introduction of numerous exotic trees and shrubs which have proved capable of withstanding the rigours of an English climate. If we analyze any good garden scene, the result which will first strike us is the extent to which we are dependent on exotic plants for the most striking features both of form and colour; the trees and shrubs indigenous to Britain, playing but a minor part in all those arrangements where high art insists on bold grouping and ornamental display. There are those living among the veteran gardeners who can remember when the *Aucuba Japonica* was an inmate of the stove; how it went from thence to the greenhouse; and, at last, was found to prosper best in the open air, one of the freest growing and most useful evergreens for massive effects and for relief to darker kinds of foliage. The most common of our common trees have now and then produced varieties surpassing in beauty their originals, and as these varieties proved permanent, they have taken the place of species, and largely added to the number of elements offered by nature to the inventors of landscapes. But with all the variety of materials at command, selections must be made with judgment, and combinations determined upon system, or the result cannot possibly convey, as every garden scene should convey, a distinct idea of a sense of harmony. Very many of our public gardens are deficient in the element which is most commonly lacking in private grounds, and that is *breadth*. Mixtures will rarely produce breadth, repetitions and masses may. The plan now adopted by most planters of keeping deciduous and evergreen kinds apart is in strict accordance with good taste, though no one unaccustomed to the analysis of landscape effects would predicate it. *A priori*, evergreens should be mixed with deciduous kinds to prevent the appearance of utter barrenness in winter. *A posteriori*, the mixture is a mistake, the deci-

duous kinds look more barren by the contrast, and the evergreens are almost lost in what may, in severe language, be described as a wilderness of bare poles. It is rather fortunate that science gives a rule that taste may accept as safe, provided it be carried out with judgment, and it is that plants of the same natural families, and even of the same genera, generally group together better for the production of bold and decided effects, than those that have very remote relationships. What can be better in its way than a clump of rhododendrons, a compartment of moutans, a belt of aucubas, or a terrace line of deodara cedars? In the anxiety to possess a great variety of the most beautiful trees and shrubs, persons who are not in the habit of employing professional planters are apt to get together rare mixtures of heterogeneous elements, and after all their expense and trouble, they are occasionally startled at the rich appearance of some well-kept garden, where none but the commonest trees and shrubs are to be found. Broad masses of contrasted colour give the eye a sense of satisfaction—it has at last found something on which it can gaze with a sense of repose. In small gardens it is no easy matter to satisfy the demands of a fastidious taste. Planting is like public speaking: in a great room, and with a large audience, it is easy and agreeable work; in a small room, with an audience of three or more, it needs the experience of half a life-time to make a speech at all. So in planting a small piece of ground; it is no easy matter to give it a distinctness of character, and every mistake stares out in bold reproach, for the simple reason that small objects invite close inspection. We were much pleased with a garden scene which we visited during the past summer, not because there was anything novel, or grand, or peculiar about it, but because the best possible effect of breadth had been attained by the use of the simplest and cheapest elements. We sketched it in order to be able to place it before our readers during the planting season, as an example of good taste making the best of inexpensive materials. As shown in the engraving, we have the lawn as seen from the drawing-room windows. The belts of shrubs consist chiefly of box, aucuba, Portugal laurel, and *Plillyrea* in rounded masses, forming two sides of a bow towards the path, which is spanned by an arch of thorn. The walk opens into a broad space of gravel, in the centre of which is a fountain, and from thence there is a walk with a few arches for climbers, and on either side of it ribbon lines for summer bedders. To give any minute description would be to waste space, because, in truth, the story would amount to nothing. The picture has breadth, the eye is neither cramped nor bewildered, but enjoys a sense of ease in the subdued harmonies of a few simple outlines and slightly-varied shades of colour. We must add, however, that this is a suburban garden of small size, near enough to London for its possessor to hear the striking of St. Paul's clock, in a district where good gardening is the rule rather than the exception, but where among the gardens similarly circumstanced, as to extent and position, there is not one which more thoroughly conveys the idea of a refined and gentlemanly taste.

But we must not go back to the dark ages in making selections for scenic effect. Some of the recent introductions of hardy shrubs place us in a position almost to defy the winter, as regards keeping up a display of colour. The splendid foliage of the variegated rhododendron, the variegated holly, and the variegated alaternus, have their match in some of the plants of recent introduction. The beautiful weeping holly (*I. var.*

pendula), sent out by Messrs. Perry, of Banbury, and recommended in the "Garden Oracle" of 1859, has been largely patronized as a decorative plant for lawns and for elevated positions on banks and rockeries. For deep green masses (*Grieslinia littoralis* stands alone in the glossy richness of its deep green leaves, and the rapidity with which it forms a dense undergrowth in rich soil. Our recommendations of this shrub, with which we first became acquainted through Mr. Standish, who had it from Messrs. Veitch, have caused the distribution of nearly the whole of the stock, and it will be some years before the supply can be at all equal to the demand for it. It endured the last terrible winter unhurt in the garden of Mr. Mongredien, on the bleakest part of that clay slope, and we have no doubt at the extreme north of the island it will prove as hardy as in the vicinity of London. We would suggest the desirability of paying more attention to the varieties of colour, which may be obtained by judiciously grouping hardy trees and shrubs in positions where their foliage would be acceptable in winter. The roses near the windows now look pitiable objects; how much more cheering a few evergreen beds or one good clump of rhododendrons and kalmias. Then there is *Skimmia Japonica*, which we do not meet with as often as we would wish, the very model of a plant for a system of winter bedding. Our specimens are now loaded with bunches of coral-coloured berries—more berries than leaves—and the flower-spikes rising to give the berries for next season. Take a fifteen-foot circular bed, put in a centre of variegated hollies, then a broad circle of *Berberis fascicularis hybrida*, next a circle of *Grieslinia*, and on the margin all round *Skimmia Japonica*, and what a charming object would that bed be at this dull time of year. Of course, the summer would bring the usual regrets, that the evergreens were in the way of bedders; but any reasonable variety of bulbs could be sprinkled in regular order over such a bed, crocuses and snowdrops, early tulips, and to follow on through the summer, lilliums and gladioli. A well-defined plan of operations, and taking each step of the process at the right time, would enable every amateur to plant his beds with small shrubs for the winter, and remove them all to the reserve ground, or to make clumps elsewhere about rustic-work and summer-houses during the summer, in order to have full play for geometric colouring. Our old friend, the *aucuba*, has now a relative, which may contend with it for a leading place, in the new *Aucuba Himalaica*, which, by its free production of berries, comes into a class which has been largely increased of late years. While we are on this subject, we may mention a few other novelties of real merit, which will soon take leading places in our garden scenery. *Quercus bambusifolia*, introduced from China by Mr. Fortune, has a most graceful and novel form of foliage, is quite hardy, and is likely to prove one of the best of his introductions. *Berberis umbellata* will be a favourite, because of the large bright red berries which it carries all winter. *Ceanothus Veitchianus* is, perhaps, the finest acquisition to evergreen shrubs of any made of late years; it proves to be quite hardy, is a free grower, and produces an extraordinary profusion of terminal bunches of flowers of the richest mazarine blue. *Chamæbatia foliolosa* is unique in its way; it grows to about three feet, is compact, branched, and erect in habit, and the foliage much divided and fern-like, so as to have a very graceful effect when planted in front lines, or singly as a specimen.

Among flowering shrubs, we must not omit to mention the new



Syringa oblata, of which there are two varieties, one producing bunches of deep purple, the other pure white, the habit being more tree-like, and better adapted to form standards for lawns than the kinds hitherto selected for the purpose. *Viburnum lucidum Towardii* is a charming addition to our lists of flowering shrubs, the flowers coming in huge balls late in the month of May, when all danger from frost is over. *Fremontia Californica* we can recommend to the curious; but we doubt if it will contribute much to general effect in garden scenes, the chief beauty being in the golden-coloured calyx, and there being some doubts as to its hardiness. Few have had the courage to plant out that exquisitely beautiful shrub, *Desfontania spinosa*, but where it has been put out it holds its ground, and it is certainly hardy south of the midland counties. If any of our northern friends can give us particulars of its success in bleak districts, we shall be glad to hear that so elegant a plant may be safely classed among the tenants of the lawn and the shrubbery.

NOTES OF THE MONTH.

COLCHESTER CHRYSANTHEMUM SOCIETY, Nov. 21.—The Colchester Association held their show in the public hall. There could be no just grounds of complaint as to the quality of the flowers, some of the cut blooms shown by Mr. Ingle, gardener to C. G. Round, Esq., of Birch Hall, the president, being equal to the best flowers shown this season. Mr. Stoddart, gardener to J. G. Rebow, Esq., carried off several prizes in the exhibition of fruit. The exhibition of fruit was admirable, nothing like it having been seen in Colchester at this season of the year for a long period. The following were the principal awards:—President's Prizes (C. G. Round, Esq.): Three large flowering varieties, Mr. Ingle; three pompones ditto, Mr. Ingle. A Silver Cup by P. O. Papillon, Esq., M.P.: Twelve cut blooms, Mr. Ingle. A Silver Cup by a Member: Twelve plants, Mr. Ingle. Specimen chrysanthemum: Mr. Russell, gardener to Stephen Brown, Esq. Four plants.—1st, Mr. Russell. Specimen pompone: Mr. Martin, for a fine plant of Helen. Twelve blooms: 1st, Mr. Ingle; 2nd, Mr. Green, gardener to Mrs. Honeywood. Six cut blooms: 1st, Mr. Ingle; 2nd, Mr. Green. Three large flowering standards: 1st, Mr. Ingle; 2nd, Mr. Stoddart. Three pompone standards: 1st, Mr. Martin; 2nd, Mr. Russell. Six purple primulas and six white ditto (given by Mr. Evans): Mr. Green. Best table bouquet of flowers (by the Secretaries): Mr. Stoddart.

HORTICULTURAL SOCIETY.—It is determined to open the new garden at Kensington on the 5th of June next, with a grand general exhibition. On the 3rd of July following, there will be a rose show; on the 11th September, a dahlia show, and a show of chrysanthemums and fruit on the 6th of November. The sum of £1500 has been apportioned as prizes for these shows. The schedules are now ready, and intending exhibitors may obtain them on application at the head offices.

CAMBRIDGE AND CAMBRIDGESHIRE, Nov. 21.—The chrysanthemums at this show were, as in most other cases this season, few, but good, proving that the most experienced and spirited growers may bring their flowers out well even in the worst of seasons, when the bulk of exhibitors, whose contributions assist in the filling the stages, are altogether left behind. Among the principal exhibitors at this show were Mr. King, of Wood Ditton, Mr. Headly, Mr. Smith, Mr. Barrett, and Mr. Nutter. Mr. King's set of six plants were *Trilby*, *Norfolk Hero*, *Antigone*, *Dupont de l'Eure*, *Queen of England*, and

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Aregina. The fruit classes were ably filled. The best collections of pears came from Mr. B. Barrett, and consisted of Josephine de Malines, Passe Colmar, Chaumontel, Swan's Egg, Aston Town. The leading apples were Hertfordshire Pearmain, Scarlet Nonpareil, Ribston, Old Nonpareil, and Waller's Russet. Mr. W. S. Wiles was first in this class.

ROYAL HORTICULTURAL SOCIETY OF IRELAND, Nov. 22.—The winter exhibition of fruits and flowers was held in the Rotunda. Grapes, pears, and apples were excellent, and there were some good pines. The principal exhibitors were—the Right Hon. the Chief Secretary, Mr. Robert Gray, Temple Hill; Mr. Thomas Bewley, Dr. Neligan, Dr. Plant, Mr. Hans H. Woods, Mr. George Pim, who exhibited good specimens of the Chinese yam; Mr. George Roe, Mr. Thomas Drury, Mr. Thomas Hutton, etc. Dr. Neligan exhibited a Newton apple-tree in fruit. Chrysanthemums in pots were admirably done, and the orchids, camellias, and epacises, were well in flower, considering the season. There was a good attendance, and an agreeable promenade was formed to the music of the band of the 96th Regiment.

TOWER HAMLETS CHRYSANTHEMUM SHOW.—The exhibition of this society took place at the Eagle Tavern, Mile-end Road, and was, in every respect, a creditable and encouraging affair, most of the specimens being the production of working men who had employed their leisure hours in the cultivation of what is especially a working man's flower. The best six pompones were from Mr. Courcha, the second best from Mr. C. Parker. Mr. A. Fisher sent the best specimen plant. Mr. Gurney first for twelve blooms. Mr. Washington first in twelve blooms undressed, with foliage attached, and also for the best four standard pompones.

EAST LONDON.—A slight error occurred in our report of the show at Albion Hall, on the 17th. The first prize for four plants was a silver cup awarded to Mr. West. The plants were Defiance, Christine, Mad. Cameron, and Plutus. In this class, Mr. Hutt was second with Christine Golden Christine, etc. Mr. Hutt had a silver cup for six pompones. In all other respects, our report in the December number is correct, and the error arose in consequence of the plants being placed so that it was impossible to ascertain with certainty to whom they belonged. Mr. Hutt's plant of General Canrobert has been photographed by Messrs. Negretti and Zambra, at the request of the Empress of the French, who was struck with admiration at its symmetry and perfection of bloom at the Crystal Palace Show.

GAS-HEATING WITH FLAME INSIDE THE HOUSE.

It has often been asserted that, in heating a greenhouse by means of gas, it is not possible to place the burner *inside* the house without detriment to the health of the plants. Perhaps some of your readers may like to know that such a thing is possible, and that, too, without the slightest damage arising therefrom to the most tender occupant.

I last year placed in a small lean-to greenhouse, which I had erected, one of Trotman's economical gas stoves, described and figured at page 248, vol. i., of the FLORAL WORLD. When I first got the stove from Mr. Trotman, the conical top or cover was made to lift on and off, in order to allow of filling the boiler with

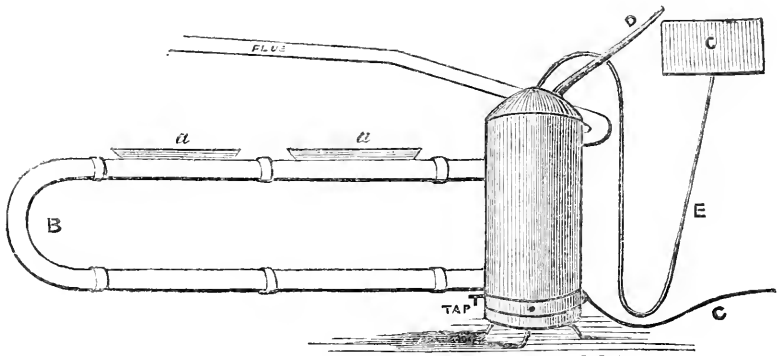
water, and was also punctured with numerous small holes to permit the steam arising from the hot water to escape into the house, and so counteract the dry heat from the flue. After trying this for a short time, I found the moisture from the steam caused too much damp. I then got a smith to stop all the holes, and to solder the lid firmly on to the stove, inserting at the same time, through the centre of the lid (as figured in the accompanying sketch), a small metal pipe to communicate with a small cistern outside the greenhouse (I think *inside* would be better, but I had not room), erected about a foot above the level of the top of the boiler, so that the water from the cistern falling through the pipe

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rises to its own level, and enters the boiler at the top of the lid, thus keeping it constantly self-filled; a small pipe for the escape of steam, as a safety valve, was also inserted at the top, and conducted outside the house. The cistern, I generally find, is kept filled by the rain which falls on the roof of the greenhouse, and which is conducted into it by a cast-iron gutter fixed under the eaves. The only attention it requires is to keep the cistern full (and well covered over if outside the house), during a long frost. I also attached a three-inch flow and return pipe to the boiler to pass along the front of the house, as I did not get sufficient heat in very cold weather. The flue, which at first was made of three-inch sheet-iron pipe, I found emitted an unpleasant smell, injurious to the plants, so I replaced it with three-inch *glazed* drain-tile pipes, which were fixed round one end and back of the house in an inclined plane, and so out at

touch it. In the severest frost I could, if I wished, by merely turning on the gas a little stronger, get the thermometer up to above 50°. All my plants, some of them tender ones, thrive well, and I have never yet found the slightest harm arise from having the gas-burner *within* instead of *without* the house.

Before concluding, I may mention another patent gas-stove (the patentee's name I forget), adapted for a small greenhouse, and which likewise answers well inside the house. It has been in use now during the two last winters by Mr. Hopgood, florist, Bayswater, with the greatest success, although I cannot speak of its merits from personal experience, but Mr. Hopgood assured me that there is never the slightest degree of foul air comes off from the stove; I have often myself seen it burning, and certainly could perceive none. There is no flue of any sort attached to it, the peculiar internal con-



a a, Detached water-troughs; *B*, Flow and return pipe; *c*, Cistern; *D*, Steam-escape pipe; *E*, Supply pipe; *G*, Gas-pipe.

the other side, where the flue was carried up four or five feet, and a movable eowl placed on the top. This I found effectually prevented any back draught coming down the flue. At the very bottom of one side of the boiler I fixed a brass tap, which enables me to draw off warm water, and which I find very convenient when watering the plants. Since I made the above alterations, I have found the stove answer admirably. There is never the slightest escape of foul air. No attention whatever is required beyond, as I said before, seeing that the cistern is kept filled during a long continuance of dry weather. Last winter I often left it burning for days together without once having occasion to

struction consuming in itself all foul air. Mr. Hopgood has this stove in use in a small conservatory for the sale of plants at 18, Bayswater Terrace, where I have no doubt he will have no objection to allow any one desirous of doing so to inspect it. I have constantly seen it burning there last winter in the midst of camellias, azaleas, and other plants in full bloom, and all looked well and healthy. The stove is about seven or eight inches in diameter, and about two feet six inches high; the gas is laid on to it by means of a flexible gutta-percha tube, so that the stove can be moved at pleasure to any part of the house in a moment. Mr. Hopgood has had a small iron basin made to set on

the top of the stove, filled with water, by which a moist heat can be obtained when necessary. The price, I believe, is about £3.

I send you an account of these two gas-stoves for burning inside greenhouses, with the hope that it may prove useful to some of your readers, who, like myself, are so circumstanced that they require a

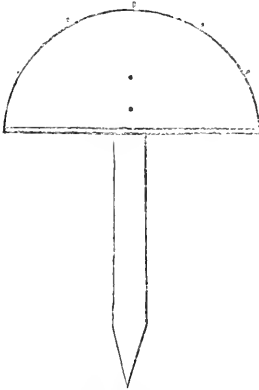
mode of heating which can enable them to leave home for days or weeks together without fear of frost affecting their favourites during their absence through neglect.

I enclose my card for your own satisfaction, and am yours,

A SUBSCRIBER.

PROTECTION OF PEAS FROM SPARROWS.

It is the complaint of almost every gardener, in the early months of the year, that the sparrows eat their peas, and do what they will, they cannot keep them off. Now I have adopted a plan for the last



of which are shown in the cut, and after putting five small nails or tacks round the outer edge; I place one at each end of every row of peas, and if the rows are long, I place one or more at certain distances along the rows; I then get some white worsted, and beginning at the first bat, tie it on to the lowest nail on either side, then take it on to the corresponding nail in the next bat, give it one twist round, and so on to the end of the row, then bring it back on to the second nails, and so on till there are five rows of worsted. This forms a complete arch over the peas, which no sparrow will venture under, besides it has a very neat and tidy appearance; in fact, I think its very neatness helps to keep the birds away, for it has something of the trap or net look about it, and so the birds are outwitted and the crop saved. Some may argue that it is extravagant to put five rows of worsted to one row of peas; not at all so, for by one person taking one end and one the other they may be shifted from one crop to another as they advance, and so last a whole season. If the bats are dried and painted when the season is over, they will last for years.

three years that answers admirably. I get a piece of yellow deal board, about seven or eight inches wide and three-quarter-inch thick, out of which I make a number of bats, the shape and dimensions

S. RANDALL.

MR. RIVERS ON TIFFANY ORCHARD-HOUSES.

Houses built with stakes or slight timber, and the roofs and sides covered with tiffany, have very recently been introduced, and found efficient in protecting half-hardy plants from severe frost.

I now propose to erect temporary houses of the same materials, to protect dwarf and pyramidal fruit-trees while they are in bloom, and I have no doubt but that they will lead to a new era in fruit-gardening among amateurs, offering, as

they do, a very cheap method of protection. A border, or bed of fruit-trees, may be eight feet wide, and planted with three rows of bush fruit-trees, as shown in the above section, one row in the centre, and the other rows three feet from it, and the trees three feet apart in the rows, thus occupying six feet of the bed. A tiffany-house to cover the trees in a bed of the above width, may be eight feet wide, three feet high at the sides, and five feet high in

the centre. The roof of tiffany should be fastened to the rafters with shreds three or four times double, so as to make a thick pad, and either nailed on with short nails, or fastened with serews, so that it may be easily taken to pieces annually the first week in June, for till then we are not safe from spring frosts.

The tiffany-house should be placed over the trees the first week in March, unless the season be unusually early, when the middle of February would be better. The sides should be loose, and be turned up night and day in mild weather, while the trees are in bloom; but in cold, sharp, windy weather in the blossoming season, they should be kept down, and fastened to the upright stakes, by tying or otherwise. A tiffany-house, twenty-four feet long and eight feet wide, will thus shelter twenty-four trees, either bushes or pyramids; if for the latter, the sides of the house should be four feet, and its centre seven to eight feet in height.

If it be thought desirable to keep the trees in a comparatively small space, they may be removed biennially in October. If larger trees are desired, the house may be enlarged as the trees grow. A tiffany-house may be from one to five hundred feet in length, and twenty in width, if desirable, for there are no particular limits to its extent, only the effects of a "March wind" must be thought about, when lofty and extensive houses are put up. As measures of economy, the timber and tiffany should be placed in a dry place when removed, and the rafters fastened to the plate and ridge board with screws. A tiffany-house thus treated, "kindly and gently," will last for several years, and in places where the climate is sufficiently warm to ripen apricots, plums, pears, cherries, and even early peaches in the open air, they will, I have no doubt, be extensively employed—*Descriptive Catalogue of Fruits*, 1860.

THE PAMPAS GRASS.

No more valuable addition than this to our ornamental garden plants has been introduced for very many years; yet so many among my own friends and neighbours have procured it and have been disappointed, that, for their benefit, as well, doubtless, as for that of hundreds of others who have been equally unsuccessful, I submit the result of my own personal observations. Of the pampas grass there are two forms—not, be it observed, two varieties, but two *forms*, or, more correctly, *sexes*. The one, which I will call the *fruitful* form (though I am not aware that fruit has been perfected in this country), when it has arrived at maturity, displays, in the summer, a large circular tuft of leaves several feet long, bending gracefully outwards and reaching to the ground, presenting a not too fanciful resemblance to a fountain. From the midst of this tuft, there begins to rise, in September, a less or greater number of stalks sheathed with leaves like those which constitute the tuft. The stalks grow quite erect, and very rapidly, often completing more than an inch in the twenty-four hours. Towards the end of October, each of these has perfected a dense, slightly-spreading panicle of flowers (that is, such flowers as the true grasses bear) about a foot long, so feathery as to wave in the lightest wind, and glistening like silver filagree-work. An early frost,

such as that which gardeners mourned over in the October of 1859, is likely to injure the stalk materially, and deprive it of the power of resisting the storms of November; but in ordinary seasons it will stand, with little impaired beauty, until late in the winter. This is the kind which everyone who has a grass-plot twenty feet square should grow in its centre, and no more stately object can be desired. The other form of the plant, which I will call the *barren*, resembles the first during the whole of summer, only it is somewhat more robust, and not so graceful in the droop of the leaves. About a month after the other, it, too, begins to send up flower-stalks, but not quite perpendicularly, nearly all of them diverge more or less to the sides. Unlike those of the fertile plant, they grow slowly, and do not show the top of their panicle through the sheathing base of the leaves, until the second or third week in October. This year no flower appeared until the second week in November, though the panicles of the fertile plant were in full perfection before the close of the preceding month. By this time the temperature has diminished to such an extent that their growth is suspended, and the stalks, being full of juices, are nipped by the first severe frost; they turn brown and wither away. This is the form of the plant which several of

my friends have planted, and, as they imagine, have failed to treat rightly; the true reason of their failure being, that they are cultivating a plant which the short summer of this climate will not bring to perfection. And now comes the question, how can the two be discriminated? I have cultivated both forms, and will state the result of my own observations. My fertile plant I purchased eight years ago in a four-inch pot. I planted it in the centre of a circular bed about ten feet in diameter, in rich soil, and gave it plenty of water. In the fourth year it sent up two noble spikes, in the next six, in the next twenty-two; and this year it has sent up no less than sixty-three magnificent plumes, the tops of which are from eight to nine and a-half feet from the ground. The distinguishing characters are these: the branches of the plume spread out slightly, and do not droop at all, or scarcely so; each flower, when examined by the lens, is found to contain an embryo seed, bearing the two diverging feathery stigmas, to be found in most true grasses; the chaff is surrounded by numerous fine, silvery bristles; a flower-stalk, measured at a joint near the bottom of the stem, is *an inch and a-half in circumference*; a leaf, measured about the middle, is *three-eighths of an inch across*. The flower of the barren plant is not accompanied by bristles, the branches of the panicle are much larger than in the other and droop most grace-

fully, the flower-stalk measures *two and a half inches in circumference* and the leaves are *five-eighths of an inch across*. I should add that the barren plant makes an attempt to flower in its second or third year, but as long as I have grown it, has never succeeded. It is, however, a handsome plant, and, as an in-door winter ornament, far more valuable than the other. Most people would scruple to cut the spikes of the fertile plant until the frost has done its worst with them; they are then, however, of little worth, for the outworn flowers easily separate from their stalks, and fly about the room like so many feathers, to the great horror of careful housewives. Not so with the other: the flower-stalks of these should be cut in November, divested of their leaves, all except the sheathing base, and be stored away to dry. In the course of a few weeks each will have the appearance of a long white rod, bearing a small tuft of feathers at its extremity. The sheaths must now be carefully removed, the last being split with a pen-knife, and within will be found what appears to be a stick of frosted silver, a foot and a-half long; but is, in reality, a multitude of closely packed abortive flowers, which, when shaken out, form the most graceful of all possible decorations of a chimney-vase. Let any one purchasing a plant, choose the one with the narrowest leaves.

Callipers, Herts. C. A. JOHNS, F.L.S.

GARDEN AND GREENHOUSE WORK FOR JANUARY.

ANNUALS, of a few choice kinds, may be sown in heat for early bloom. A few pans of *Fenzlia dianthiflora*, *Nemophila maculata*, *Anagallis Indica*, *Clintonia pulchella*, *Veronica Syriaca*, *Hibiscus Africanus*, *Commelina celestis*, *Datura humilis*, and *Nierembergia gracilis*, will pay well for the trouble, especially for the bouquet and drawing-room.

ASPARAGUS beds being forced, to have liberal supplies of water, and the heat kept at 55° to 60°. Line beds where the heat is declining. At the end of the month prepare beds by manuring and trenching for planting in March. For culture, see vol. ii. p. 224.

AURICULAS.—Protect from frost, and allow snow to remain on the covering. During intervals of mild weather give plenty of air and clean up the stock.

AZALEAS.—Start the earliest in a moist air at 55°, to be increased to 65°. Give

plenty of water. Succession plants keep dry and airy, and as cool as possible, but not to be touched by frost. Tie out where needed.

CAMELIAS.—Treat same as advised for azaleas.

CARNATIONS.—Give as much air as possible, and follow the directions given above for auriculas.

CAULIFLOWERS will want dusting with lime to keep off snails. Set a few traps among the plants, and take them up every morning. Sow a few in pans in gentle heat, to prick out in March.

CINERARIAS coming into bloom to have the utmost allowance of light, plenty of water, and good greenhouse temperature. See vol. iii. pp. 21, 89.

COMPOSTS turned now will much benefit by frost. Clear out the muck-pit, and lay up the stuff in heaps or in a long ridge for the frost to go quite through it.

CUCUMBERS.—Sow as often for early

supply, and a week after, make up the fruiting-bed, and turn it several times to get a sweet heat. Pot the young plants as soon as the seed-leaves are full grown. Use sixty-pots, one plant in each, and stand the pots on a warm, moist bottom. This is better than potting in pairs, as they turn out with complete balls.

CRISTUS.—We have had *Atleana* in full bloom ever since August last, and the plants are now loaded from head to foot with racemes of buds. It is certainly the best of the family for all small collections. None of them are particular about the position they have. Those coming into bloom now require a little weak manure-water occasionally.

FRUIT-TREES.—This is a good time to clean up trees affected with blight, and to thin out crowded spray and foreright shoots on espaliers. Beware, however, not to lop old trees severely. The saw does more harm in orchards than all the blights and mildews together. See vol. i. p. 28.

GERANIUMS.—The delicate variegates must have a warm place. Such as *Dandy*, *Lady Plymouth*, and *Golden Chain*, do best on a warm, dry shelf, where they can have every ray of sunshine possible, and water only when they thoroughly need it. Show *pelargoniums* to have just enough fire-heat to keep them moving, and not a drop of water on the foliage.

PANSIES in the open ground must be hooped over during frost, and after frost be made firm if lifted. Sow one or two pans for an early lot of seedling blooms.

PEAS and **BEANS** sown on lengths of turf now may be transplanted without disturbing the roots, as soon as weather permits. Sow in the open ground *Sangster's No. 1*, or *Early Champion*; sow also *Mazagan* and *Longpod* beans. A few French beans in pots or boxes will pay; they may stand on a rather cool flue or in any odd corner until they break ground, by which time there will probably be room for them near the front lights; to have the same treatment as potted strawberries. *Newington Wonder* is the best for the first crop.

PITS to be kept clean and airy. It is a mistake to allow the plants to get dust dry, but very little water must be used, and not a dead leaf allowed to remain. See vol. iii. p. 168.

RADISHES may be sown on warm slopes, where they can be covered with straw or bean haulm during frost. Early short top for the first lot.

ROSES in pots to be looked over, and those with the ripest wood and plumpest buds to be started, along with *camellias* and *azaleas*, for early bloom. Planting in the open ground had better be deferred. Those planted in November to be kept securely staked, as the rocking caused by wind will injure the newly-formed roots.

SEA-KALE.—Keep up a succession by covering a fresh lot from time to time, according to the consumption. Add fresh litter each time, to keep up the fermentation.

STRAWBERRIES.—Give as much air to forced plants as possible, or the fruit will be flavourless. See vol. iii. p. 30.

AMARYLLIS.

THIS is such a strange family of plants, that, in attempting a brief sketch of their cultural requirements, one scarcely knows where to begin. The truth is, the order was always in confusion, from the day that *Linnaeus* instituted it; and though the late *Dean of Manchester* brought the confusion within limits, he did not entirely succeed in evoking perfect order from it. But there is always a way of escape from a botanical dilemma if the object is to set forth culture only, because, from a horticultural point of view, we can make as many exceptions as may be necessary; and so on this plan we may remark at once, that all *amaryllids* will not endure the same uniform method of treatment. It is very much a question of natural habitat, and no horticulturist

will ever make a figure as a grower of *amaryllis* without inquiry as to the sources of species at least, if he does not follow varieties to their several origins. There is, perhaps, no man living who could now do with the members of this family what *Mr. Sweet* did for them in his day. He understood their geographical history, and was a master of hybridization as well as an industrious cultivator, and he originated more hybrids than have been produced during the whole period that has elapsed since he ceased his labours. Those that come most under the notice of gardeners are *A. belladonna*, *A. pallida*, *A. Blanda*, *Brunsvigia grandiflora*, and their hybrids, all natives of the Cape, and as such the easiest divisions of the tribe to manage, being strictly seasonal in their

growth. From these *Hiippeastrum*, generally confounded with *Amaryllis*, stands quite apart. *Amaryllis* will go to rest when its season of rest comes, or will punish its possessor in some way or other; but *Hiippeastrum* may be grown and bloomed at any season, and being thus without a very distinct law of its own, it requires care and judgment to manage it effectually. Respecting the *Belladonna* lily, we only need remark that it is as hardy as a tulip, that it loves sand, and when out of doors should, if possible, be planted under a wall in a shady but sheltered place, and left to take care of itself. The other species and their varieties are more tender, and we obtain a key to the treatment of them by calling to mind the climatal influences they are under at the Cape. They grow wild where the soil is very sandy; they bloom before the heat of the season has reached its maximum. After flowering, their foliage begins to die down, and just as their bulbs get to rest the heat rises to 100°, and the bulbs ripen in the natural hot-bed of dry sand, which burns the native pclargoniums to sticks. These points must be borne in mind by the cultivator, or he cannot expect to succeed; but once get a few good sorts, treat them as Nature treats them at home, and you will not only have a splendid bloom, but an abundance of off-sets, which very soon take to a habit of flowering.

But under pot culture sand alone will not suffice as a source of nourishment for amaryllids. The best mixture is turfy loam, thoroughly rotted and pulverized, one part; sharp sand, one part; leaf-mould, sweet and completely rotted, one part. If the loam is poor, add decomposed cow-dung, not more than one-sixth of the whole bulk. When potted, put in a steady bottom-heat at once, the average to be 55°, the most effectual drainage possible, and plenty of water. The flower scapes will rise in a fortnight, and the stately flowers will produce their colours and rich perfume in perfection. A tan-bed, or the coolest part of a tank in any sweet plunging material, will just suit them, and the best time to pot them is when they begin to start of their own accord. When the bloom is over, every possible encouragement should be given to the growth of the foliage, a warm moist atmosphere and an increased bottom-heat being most essential. As soon as the foliage shows signs of having done its work, dry them up, and increase the bottom temperature to 70° for a fortnight, then let them

cool, and finally store away in the pots without disturbing them on a warm dry shelf, the pots laid on their sides. They ought to rest two months at least, and then may be left untouched till spring in a dry corner of the stove, or may be potted at once for early bloom.

Where there is no stove they must have the warmest place in the greenhouse for flowering, and be roasted to rest on a top shelf, the bottoms of the pots turned towards the sun. A thorough maturation of the foliage, and a complete and dry rest, are of the first importance. Bearing these two points in mind, it will not be found difficult to flower them in frames and pits later in the season, and thus keep up a succession of these esteemed flowers. We subjoin a list of choice hybrids, reserving a few other particulars for a future paper.

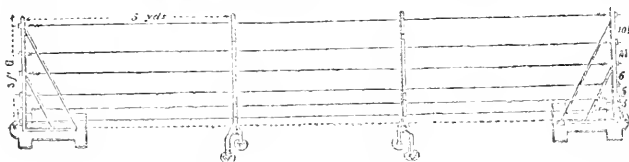
HYBRID AMARYLLIS.

<i>Ackermania pul-</i>	<i>Marginata.</i>
<i>cherrima.</i>	„ <i>conspicua.</i>
<i>Augustine.</i>	„ <i>venusta.</i>
<i>Ajax.</i>	<i>Maria Morren.</i>
<i>Ardens.</i>	<i>Mathilde.</i>
<i>Ariadne.</i>	<i>Mirabilis.</i>
<i>Aulica fulgens.</i>	<i>Miranda.</i>
<i>Baron von Heckeren</i>	<i>Montezuma.</i>
<i>Beauté parfaite.</i>	<i>Novelty.</i>
<i>Bellissime.</i>	<i>Obscura.</i>
<i>Bieri.</i>	<i>Optima.</i>
<i>Brasilensis.</i>	<i>Ornata.</i>
<i>Cardinal.</i>	<i>Pagoda.</i>
<i>Cleopatra.</i>	<i>Phenicea.</i>
<i>Cochénille.</i>	<i>Pomponia.</i>
<i>Crocea grandiflora.</i>	<i>Prince de la Mos-</i>
<i>Delicata.</i>	<i>kawa.</i>
<i>Diomeda.</i>	<i>Princess de Ligne.</i>
<i>Duchesse de Cazes.</i>	<i>Psittacina.</i>
<i>Elegans.</i>	<i>Prince of Orange.</i>
<i>Extravaganza.</i>	<i>Pulcherrima.</i>
<i>Feu admirable.</i>	<i>Pulverulenta coc-</i>
<i>Furiosa.</i>	<i>cinea.</i>
<i>Generalissimus.</i>	<i>Radiata.</i>
<i>Gravignii.</i>	<i>Sanguinea.</i>
<i>Grandiflora coccinea</i>	<i>Spectabilis,</i>
<i>Holfordiana.</i>	<i>Sweeti.</i>
<i>Ignea.</i>	<i>Syrius.</i>
<i>Ignescens.</i>	<i>Tettani.</i>
<i>Imperialis.</i>	<i>Trafalgar.</i>
<i>Jenny Lind.</i>	<i>Tricolor.</i>
<i>Johnsoni.</i>	<i>Venosa tubiflora.</i>
„ <i>rutilans.</i>	<i>Victoria superba.</i>
„ <i>striata.</i>	<i>Vittata.</i>
„ <i>superba.</i>	„ <i>amiabilis.</i>
<i>Leonie.</i>	„ <i>grandiflora.</i>
<i>Madame Aimé.</i>	„ <i>rubra.</i>
<i>Magnifica.</i>	„ <i>superba.</i>
<i>Majestica.</i>	<i>Wheeleri.</i>
<i>March'ss, Stafford.</i>	<i>Seedling varieties.</i>

ESPALIER WIRES.

I WANT to get rid of the oak stakes and rails in a length of espalier trees, and substitute something neater and less perishable. Can I get any ready-made affair

vermin will harbour, as they do in wood, and which will be almost imperishable, and scarcely at all visible. Mr. Gidney, of East Dereham, Norfolk, makes a capital



that will answer the purpose, and combine durability with neatness. B. B.

[You cannot do better than have a set of strained galvanized wires, in which no

strained wire fence, as represented here, and if you want "a ready-made affair," he will provide it to your own measurements ready to be fixed at once.—ED.]

THE RADISH AND ITS USES.

THE late Mr. Knight very justly remarked that in spring, about May, the old turnips were gone, and the new ones not come, and he proposed forcing turnips to supply this deficiency. Here the radish steps in to supply, and from year's end to year's end the veriest clown of a gardener may have an excellent succession of radishes. I have had some cooked in the plainest manner possible, with only a little salt in the water, and they are delicious to eat, and very beautiful to look at upon the dish. To say anything to gardeners on the culture of radishes would be superfluous; but, for the sake of cottagers, let me add, that those I ate were as thick as my finger, and were only about thirty days old from the day of sowing. The potato ground will yield millions of radishes, both before the potato-tops cover the ground in spring and after the potatoes are harvested in autumn. I have long tried to get cottagers into the way of growing salad, being convinced of the comfort and importance of it in every family, not to speak of its economy; and when I see poor people with large spaces of ground in their gardens lying idle in summer for two or three months, I cannot help thinking that their poverty is a good deal to be attributed to their own fault; if "ignorance of the law excuses no man," surely the ignorance of culture is equally inexcusable in those who pay rent for the use of land for a certain number of growing days, and then give a number of the best of these days to the growth of weeds. If, therefore, thirty days of growing weather can be got, good

cultivation will secure a crop of radishes in that time; but as I do not like to leave things vaguely, I will just weigh the crop, and measure the land, and thus count the cost of this crop and its capabilities.

"It is but a small root," the lazy man will say. True, friend; but its top is small too, and it will stand the closer on the ground, and its time is but short in coming to perfection, as compared with other crops. Three crops of radishes may be raised in the time necessary to grow one crop of potatoes; perhaps six in the time of one crop of corn. "Six crops for one year's rent!" Ay, friend, and here lies the rub; and every bit, both top and tail, of the radish, is good pig food when boiled, for both have been eaten raw by Christians. The average weight of each radish is one ounce and a-half, and about half an ounce of this is top or leaves, thus leaving one ounce of root; and the average of the space occupied by each plant is sixteen square inches, or nine plants in a square foot. Now this gives five pounds of roots per square yard, one hundred and fifty pounds to the perch, or about five tons fourteen cwt. per acre of roots; and if we add two tons seventeen cwt. of tops, we have eight and a-half tons per acre in thirty days, and even four crops a year of this weight gives twenty-two tons of roots and eleven tons of tops per acre.

Perhaps the only way to bring this valuable root into use among cottagers (I had almost said among gardeners and farmers, for they will all have it), is to give it a fair trial, on a small scale, after

potatoes, and, forgetting that it is a radish, count it a small carrot. Bear in mind that this is not the first salad plant that gardeners have given to agriculture; for the red beet was, and is still, a salad plant, or rather a salad root; and the mangold wurzel, or field beet, is a very valuable salad to agriculturists now-a-days. Late potatoes are generally planted in May: surely there is time for a crop of radishes to come to maturity before that. When cabbages are planted, there is room for a line of radishes between the rows; and now that

their usefulness as a boiled vegetable is pointed out, there is little fear of their being cultivated. As the seed is a good size, it is not, like carrots, difficult to sow regularly; and as it is cheap, it is quite within the reach of very poor people, and even the more experienced gardener may find a handsome dish of well-flavoured radishes very useful at his master's table, especially at that season when Mr. Knight so clearly saw the gap in the succession of culinary crops.—A. FORSYTH, *Allon Towers (Gard. Chron., 1847)*.

TO CORRESPONDENTS.

SELECTION OF FRUITS FOR A WET CLAY SOIL.—*Dr. D. Pinner.*—The friend who writes on your behalf does not state particulars of the extent of ground to be planted, nor the breadth of walls to be covered. Nor are we informed whether you wish for advice only on open ground planting, or for suggestions on stocking orchard and forcing-houses in addition. In all wet soils the pot-culture of grapes, peaches, nectarines, apricots, and pears is of great importance, as in such a season as 1860 there would be a certainty of fruit, and of the wood being well ripened, such as could not be insured in the case of trees exposed to the vicissitudes of excessive wet and insufficient sunshine. As the season is far advanced it would be well, perhaps, to defer planting till February, when the ground will, perhaps, be in a better state. There are signs of improvement, however, and if the weather continues mild, it might, perhaps, be best to plant as soon as possible, provided the soil is in a workable condition. We must caution you, however, that as there is an immense demand for fruit-trees of all kinds this season, those who give orders late will not be sure of the best, for the stocks are being picked over every day. As to obtaining them, it is not our practice to recommend dealers, but this we are always prepared to do, namely, to recommend purchasers to deal with their neighbours if they can, and the plan has this advantage, besides its fairness, that the nurserymen of a district know better what will suit the district than those who live far off.

The fruit which most delights in wet is the quince, and a most useful fruit it is. Plant a few of the Portugal in the wettest part of the ground. Plums will do well with you, especially if the stations where they are to be planted are first liberally dressed with burnt clay. As a rule, bush-trees are better than standards for private growers, because giving more amusement and a much greater variety, as regards space of ground occupied, than can be obtained from standards. Besides this, they can be lifted annually or biennially, which will prevent their roots getting out of reach of sunshine, and prevent canker and rank growth, two evils common to wet clays. Apples on Doucin stocks, and pears on quince stocks, will give good crops on soils which would run them on crab and pear stocks. Even the Ribston Pippin, the most subject to canker of any apple we have, and one that no one can avoid planting, never cankers when grown as a manageable bush, or pyramid, and lifted every year. For the wall-trees the border should be made up with a hard bottom of brick rubbish and old plaster, rammed hard on the present level, then on that foundation lay two feet of the soil of the place, with a good proportion of burnt clay to render it porous. This will raise it two feet above the surface, and the trees

will thrive. We will not promise them to thrive if planted on the present level, without such preparations. Clay will always correct itself, if a portion is burnt and returned. Apricots, peaches, and nectarines, plant as usually sent out by the nurseries, on muscle stocks. If you can get a few apricots worked on apricot stocks, give them the preference, but do not have any of this class of fruits on almond stocks. In planting the wall-trees, fill in the holes with a mixture of burnt clay, leaf-mould, and the most pulverized portion of the soil of the place. Cherries will do no good at all unless planted on platform s, so as to be lifted out of the wet, and with about a fourth or sixth part of sand chopped up with the soil in a space of at least one square yard for each tree. The following varieties will furnish early, medium, and late supplies, and the culinary and dessert kinds are in proper proportion to each other for the ordinary wants of private families.

APPLES, STANDARDS.—*Kitchen:* Keswick Codlin, Lord Suffield, Cox's Pomona, Hawthornden, Bess Pool, Dumelow's Seedling, French Crab, Norfolk Beefing, Winter Magetin. *Dessert:* Kerry Pippin, Court of Wick, Golden Pippin, Count pendu-plat, Hulbaro's Pearmain, Nonpareil, Ribston, Sturmer Pippin.

APPLES, bushes or espaliers.—Boston Russet, Ribston (our best Ribstons in 1860 were from bush trees), Sturmer Pippin, Braddick's Nonpareil, Mank's Codlin, Golden Pippin, Golden Harvey, Margil, Pinner Seedling, Scarlet Nonpareil, Devonshire Quarrenden, Baron Ward.

PEARS, Standards or pyramids on pear stock.—Swan's Egg (this is splendid now from the crop of 1860), Autumn Bergamot, Jargonelle, Jersey Gratioli, Suffolk Thorn, Windsor, Williams' Bon Chretien, Colmar.

PEARS, bushes or espaliers on quince stock.—Marie Louise, Winter Nelis; Beurre d'Amanlis, Baronne de Mello, Glout Morceau, Zephirin Gregoire, Flemish Beauty, Forcille, Huyshe's Bergamot, Prince Albert, Conseiller de la Cour, Colmar d'Ete, Easter Beurre. Josephine de Malines is best worked on the hawthorn, but will do on the quince.

APRICOTS.—Kaisha, Large Early, Moorpark, Peach, Shipley, Turkey.

PEACHES.—Early Grosse Mignonne, Early York, Grosse Mignonne, Noblesse, Salway and Royal George in the warmest and driest position.

NECTARINES.—Downton, Early Newington, Elruge, Pitmaston Orange, Violette Hative.

PLUMS.—July Gage, Greengage, Coe's Golden Drop, Late Orleans, Jefferson, Mitchelson's, Diamond, Victoria, Goliath.

GRAPEs, Walls.—July Muscat, Esperione, Pitmaston, White Cluster, Royal Muscadine.

GRAPEs, Cool house.—Chasselas Musqué, Mus-

cat St. Laurent, Black Hamburgh, Golden Hamburgh, Chasselas Vibert.

GRAPES, *Forcing*.—Chasselas Musqué, White Frontignan, Trentham Black, Rowood Muscat, Lady Downe's, Barbarossa.

CHERRIES, *Standards*.—Knight's Early, May-duke, Hogg's Red Gean, Kentish, Late Duke.

CHERRIES, *Espaliers or bushes*.—Belie d'Orleans, Werder's Early Black, Royal Duke, Bigarrean, Black Eagle, Eiton, Coe's Carnation. The Morello will do on a north wall, better on a west wall, and makes a pretty bush worked on the Mahaleb.

STRAWBERRIES.—Black Prince, Eiton Pine, Carolina superba, Keen's seedling, Oscar, Cuthill's Princess Royal, British Queen. The last should be planted on a raised border, dressed with burnt clay and charred rubbish, with, of course, a sufficiency of manure.

RASPBERRIES.—Carter's Prolific, Antwerp Red, Antwerp Yellow, Fastoff, October Yellow, Cuthill's Prince of Wales.

CATALOGUES RECEIVED.—“Descriptive Catalogue of Selected Roses, and Ornamental Trees and Shrubs, Fruit Trees, etc., grown by Edward Cooling, Mile Ash Nurseries, Derby.” Nicely printed and arranged, so that the reader may find in a moment any class of subjects in which he may be interested. All the new roses are entered at reasonable prices.—“Carcy Tyso's Descriptive Catalogue of Ranunculuses, Anemones, and other hardy roots and bulbs. Wallingford, Berkshire.” As usual, this eminent breeder of ranunculuses offers a select lot of new seedlings, and all the best old varieties, at reasonable prices. Those who have not forsworn these beautiful flowers cannot do better than obtain Mr. Tyso's catalogue, and prepare themselves for the coming season.

ESSENCE OF CELERY.—*B. A. T.*—One ounce of celery seed in half a pint of vinegar; a few drops of this gives a fine flavour to soup, or sauce for fowls.—*STEWED CELERY*.—Cut clean plump stems into four inch lengths; tie them in bundles, and stew till quite tender. Use plenty of salt, and keep them boiling fast. Serve with melted butter. By many this dish is preferred to asparagus.

FRUIT-TREES FOR A NORTH WALL.—*B.*—Morello Cherries, Late Duke and Black Eagle Cherries; Marie Louise, Jargonelle, Verulam and Thompson's Pears; Orleans Plum. Beurre Diel and Crossane Althorp Pears will do on the north-west.

LAYING OUT A GARDEN.—*Frome*.—We cannot undertake to propose plans for gardens. It would be downright quackery. In the early chapters on “Profitable Gardening,” in the first volume, you will find some general advice that may be useful. As to the proportions for fruits, flowers, and vegetables, we cannot guess at your wants, and therefore must give no counsel. To make a boundary fence there is nothing prettier than Coteoneaster microphylla trained to wooden stakes; sempervirens roses make beautiful fences on strained wires, and they are cheap, and soon make an effect. Then you have choice of yew, Chinese privet, holly, and Berberis fascicularis hybrida. In such a small space you had better plant only espalier or bush fruit-trees; standards will swallow up too much room. The best book on general garden practice is Thompson's “Gardener's Assistant,” published by Blackie and Son.

RHODODENDRON SOIL.—*V. A.*—The soil for American plants must be of a proper mechanical texture, because of the hair-like roots which they form. Turfy peat is the best. There are some silky loams in which they grow well, and mix-

tures of thoroughly-decayed leaves, rotten wood, and sharp sand will do where peat is not to be obtained. Animal manures are not needed as a rule, and if the peat is good, the addition of dung is more likely to spoil it than to improve it; but old American beds may be refreshed with top-dressings of quite rotten cow-dung. Chalk, lime, and clay are materials they dislike. They may be planted at any time, even when in full flower, but the best seasons are September and October, and February and March. We advise you not to proceed with your bed for another month. As to gas-heating, you will see what a correspondent has to say on the subject. We have seen several houses lately that are heated by means of a flame burning in a box, but we must see them again and again, and observe how the plants stand if ere we can venture to recommend a flame inside the house.

POLMAISE, GREENHOUSE SHRUBS, ETC.—*G. H.*—The principle of Polmaise is very simple, though a great deal may be said about its applications. One leading feature is the maintaining of a continual circulation of the whole air of the house, and this renders it eminently suitable for geraniums, New Holland and Cape plants, greenhouse bulbs, and orchard-houses. It will do well for your lean-to, 90 by 18, divided into three compartments, and we would advise the substitution of a good fire-lump for the iron plate, which is commonly used for the heating medium, together with a judicious arrangement of the cold air drains. Mr. Kendall, the well-known market-grower, of Queen Elizabeth's Walk, Stoke Newington, has had it in operation to heat a range of houses for several years, and he would have no objection to your viewing the apparatus, and the splendid show which he has at almost any season of the year. *Philesia buxifolia* is generally dealt with as a tender plant, whereas it is very nearly, if not quite, hardy. The soil for it should be peat and loam, equal proportions. It must have plenty of water, and be pruned in rather smart immediately after flowering. If yours does not bloom this next summer, prune it in June as if it had, and with plenty of air and water all summer, we think you will the next season obtain from it all you want. If you let us know how you have hitherto dealt with it, we will endeavour to point out in what particulars you are right or wrong. *Desfontania spinosa* is a charming evergreen shrub, with which but little has been done yet. The best plan to get up specimens is to let it grow as it likes, except the removal or shortening of any ill-placed shoots. The soil should be turfy peat and old cow-dung; the plant rarely to see the sunshine, and to be kept as airy as ericas, and have as little taste of fire as possible. *Cypripedium insigne* will succeed to perfection in ordinary greenhouse temperature. *Dendrobium* will live in the same temperature, but never come to any good. *Indigofera decora*, a beautiful greenhouse shrub, producing a profusion of large bundles of rosy pink flowers, and blooming when quite in a small state, is easily managed. Pot in equal parts turfy loam and peat, with one-sixth of silver-sand. Give liberal shifts, and push the growth, and flowers are sure to come.

CYRTOCERAS REFLEXUM, *Coventry*.—This requires a brisk heat top and bottom all winter and spring; to be saturated with moisture, and frequently syringed overhead. Keep in the stove till the blooms begin to expand, then place in an airy greenhouse, and the thing is done. Your failure is probably owing to insufficient drainage; if so, turn it out, clean the pot, *half fill* it with crocks; lay on them a handful of the toughest fibre out of your peat; place the plant on that, and fill up with equal parts of thoroughly good

turfy loam and peat, with one-sixth sand, and put in bottom-heat at once with abundance of water. Pentas rosea and carnea, beautiful plants, much neglected; treat in precisely the same way.

ROSES AT HOMERTON.—*W. D. P.*—Your letter gives particulars of soil, situation, aspect, and surrounding circumstances in such a way that it is a more than ordinary pleasure to give it attention and reply. At Homerton, with an open aspect, you may grow roses well, and in the September number of the FLORAL WORLD you will find some hints that will enable you to steer clear of difficulties, and know in which direction you may proceed more safely. We are not prepared to say whether the Railway Company violate the law in smothering your garden with smoke as the trains pass, not having the Smoke Act at hand to refer to. But this evil is not of a nature to prove serious, being altogether different from the constant outpouring of smoke from neighbouring factories, with all the poisonous gases incidental to manufacturing works. There can be no rule given to enable an amateur to distinguish Manettis from briars when worked close to the collar, though a person accustomed to the growth of stocks would determine presently, the spines and bark of the Manetti being very distinct from those of the briar. We should suppose your plants worked six inches high to be briars, certainly Manettis ought not to be worked so high, because of the subsequent planting. Nevertheless, plant them below the work, and the roses will get roots of their own in time, and meanwhile you must keep a look-out for suckers; if they are on briars these will be sure to push vigorously, and must be removed by unearthing them to the base, to pass the knife through at their junction with the root-stock. The roses you name are all good. H. P. Mad. Campbell, a show rose, colour pale red, sometimes striped, not generally good near towns, but if kept rather cramped in pots till June, then cut back and turned out into well-manured soil, gives beautiful autumn blooms. H. P. Ravel, brilliant crimson, dwarf growth, one of the best at Stoke Newington on its own roots, but by some oversight escaped being entered in the list of good ones, in the article just referred to. Mr. Cranston would do well to insert it in his list of roses for townsmen. H. P. Ernest Bergman has been kicked out of all choice collections, and we can say nothing of it as a town rose. B. Reveil, dark purple, magnificent in its proportions, requires a good air, and is, therefore, not among the best for your purpose. B. Appolline, light pink, makes a good pillar or weeping standard, and will endure almost any amount of smoke. Marechal du Palais (?), not acquainted with it. D. P. Blanche Vibert, ditto. T. Gloire de Dijon, certainly the best of all choice roses for town.

INUNDATED.—*Rev. E. G.*—We suppose you to be near the outcrop of a stratum impervious to water, seeing that the springs rise after the rains have ceased. The fruit-trees and strawberries will certainly suffer materially, many may perish altogether if under water long, especially with such weather as we have now. You must adopt some temporary expedient to draw the water to a lower level, or open the way to an outfall at once, and, as soon as weather permits, secure efficient drainage. You must set the whole value of your stock against the cost of remedy, and judge for yourself whether to take measures at once, or wait and risk it. We foresaw that such a state of things would arise, and sounded the alarm in August last.

TREE ONION.—We are informed that Messrs. Hooper and Co., of Covent Garden, have a few bulbs of Tree Onion, which they can supply at 2s. 6d. per dozen, or 3d. each. Several correspondents who appear not to have noticed the

remark at page 280 of the December number, have written requesting us to supply them. As we frequently receive orders for plants recommended in these pages, we must repeat that we are not dealers nor commission-agents. We describe and recommend things that we think will suit our readers, and there our task is at an end. We have never anything except our book to sell, neither can we recommend traders, except in such a peculiar case as the one now before us.

SPIRGULA PILIFERA.—*T. S. M., Hammersmith.*—It will take about five shillings' worth of seed to make the verge you want. Your conveniences for raising it are not such as to warrant us in recommending you to sow now. As you are circumstanced you had better wait till April, and then sow a small patch of it in the open ground, on fine soil. As soon as large enough to handle, transplant it in rows three inches apart every way, and allow it to spread and thicken, and by August it will be tufty enough to plant where it is to remain. The fullest accounts of the uses and management of this interesting plant have appeared in the FLORAL WORLD. See vol. ii., pp. 64, 96, 119, 149, 183; vol. iii., pp. 154, 271.

LAWN FOLI WITH DAISIES.—*A Sub.*—You have hit the nail on the head yourself. As the lawn is small, spud the daisies on any leisure time during the winter, and in February or early in March sow it over with a mixture of finest lawn-grasses obtained from some house that you can depend upon. The turf will be close and firm by Midsummer. Choose dry weather to sow, cover the seed with a sprinkling of fine earth, or sand, and roll.

PYRAMID CHRYSANTHEMUMS.—*J. H., B. S. T., and others.*—Numerous correspondents have asked for instructions how to grow these. We have been favoured by Mr. Monk with an account of his method, which cannot appear till next month, owing to our loss of space by the publication of the index.

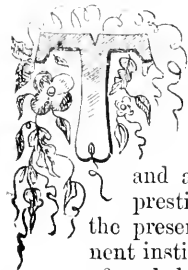
ROSES—*G. W., F. H.*—Fresh horse droppings may be used at once as a surface dressing, to be pointed in with a small fork in April. Get the ground manured, and plant your standards at the end of February.

VARIOUS.—*R. G. Gretton.*—Your plant is *Potentilla Nepalensis*, a pretty hardy perennial, blooming from Midsummer to the end of the autumn.—*Rose.*—We have a drawing of a propagating case similar to the one you describe in the hands of the engraver. The Waltonian was not praised for any novelty in the idea, but because of its practical value. There are people who fall in the simplest things, even in growing cabbages, gooseberries, and scarlet geraniums; it is no wonder, therefore, that some should find the Waltonian a hard nut to crack. So it is, and it can't be helped.—*R. R. R.*—Bees are in an awful state this season, and many stocks will be lost. But we dare not advise feeding while the glass is 12° below freezing, as it is while we write this. No, leave them alone for the present, and feed as soon as they begin to move in spring, choosing mild weather. If you think there is a chance of their getting through without feeding, then leave them alone, for the less they are disturbed the better.—*Hope, Dunmore.*—“Brambles and Bay Leaves” is out of print. See an article on Pitcher Plants in this month's number of “Recreative Science.”—*Dublin Subscriber.*—Write to D. Stead, Huddersfield. His bouquet-holder is a good thing for pyramids of single flowers, but clumsily made and dear. We described it as “pimping” in design, as you will see by reference to p. 182 “Rustic Adornments.”—*J. G., Brixton.*—Be assured the intention was to do justice to all. How fallible we are even in the simplest matters.

THE
FLORAL WORLD

AND
GARDEN GUIDE.

FEBRUARY, 1861.



THE ROYAL HORTICULTURAL SOCIETY will take precedence during 1861 in the direction of horticultural energies, and in ministering to the public taste for excitement and display. After all its buffetings, mistakes, mishaps, and declensions, there is a vast life in it still, and a great promise of its acquiring more than its original prestige in the execution of the programme set before us for the present season. The success of the new garden as a permanent institution is a matter on which we can speculate only as one of probabilities; but there will be so much novelty in the design, and it will be opened on the 5th of June next under such distinguished patronage and liberal encouragement, that, for the present at least, we may regard it as the centre of attraction to all who are interested in the progress of gardening as a science and a recreation. On the 5th and 6th there will be a miscellaneous exhibition at Kensington Gore; on the 10th of July a rose show; on the 11th of September a show of dahlias; and on the 6th and 7th of November a show of fruit and chrysanthemums. We will venture to express a fear that the last of these is fixed at too early a date for many of the leading growers of the chrysanthemum, who, it must be remembered, are not all located in warm and forward districts. The revival of the fruit show we regard as the most satisfactory of the features in this programme, for there was never a more instructive and entertaining spectacle got up by the Horticultural Society in its palmiest days than the great autumn exhibition of fruit; and, now that the Pomological Society is shrivelled up, a great general gathering of pomologists has become a desideratum. All the other shows we could do without; not that we have any misgivings as to their success and usefulness, but simply because good exhibitions of flowers are sure to take place even if the ægis of the Society were not lifted in their aid. The schedules of the shows are published in full in the January issue of the Society's "Proceedings," and on those schedules we will offer a few observations.

We will first remark, that in the apportionment of prizes very substantial encouragement is offered to amateur cultivators, and under this

term are included by the schedules all except those who grow plants for sale. For instance, on the 5th and 6th of June the money prizes offered to nurserymen amount to £151; the prizes offered to amateurs amount to £250; those open to all make an aggregate of £228 10s. In the classes for fruit there are no distinctions made as to exhibitors, and the Society's prizes amount to £107 10s., added to which G. W. Dilke, Esq., vice-president, offers £20 for the best groups and baskets of fruit and flowers for the decoration of the dinner-table. The total offered, then, in money prizes at the opening exhibition is £757. At the rose show, July 10th, nurserymen have apportioned to them £37 10s.; amateurs £30; and the prizes open to all amount to £62 5s.; giving a total of prizes for this show of £129 5s. At the dahlia show, September 11th, the amounts are nearly equal; the nurserymen have £18, amateurs £19 15s., and the open class £60 15s.; giving a total for the dahlia show of £158 10s. At the closing meeting the only distinction of exhibitors in the fruit classes is in the assignment of £7 to fruiterers, and £13 to private growers for the best collections. The total offered for fruit is £208 14s., which includes £10 10s. for miscellaneous fruits of kinds not specified in the other classes. In the prizes for chrysanthemums amateurs carry the day against the nurserymen, the former have £45 9s. offered them, and the latter £18 5s.; the open classes amount to £14 2s.; making the total of prizes for chrysanthemums £78 6s. Casting up the amounts offered to nurserymen and amateurs respectively, it will be found that nurserymen have specially assigned them £254 15s., and amateurs £375 4s. Very different this to the swamping system adopted at the Crystal Palace to make an attractive exhibition without any regard to the interests of horticulture. The total amount of the money prizes is £1332 5s.; added to this, additional prizes not specified in the schedule will be awarded on the recommendation of the judges to subjects which they may consider deserving, and there will be a liberal distribution of medals for novelties and rare plants in flower.

In the regulations there are but few points demanding special mention. We are glad to see that all plants and flowers are to be carefully labelled with their scientific names, and, where practicable, the name of the country from whence introduced. Florists' flowers and fruits must bear their customary names. This matter we would urge upon the consideration of exhibitors as immediately concerning themselves, as well as involving the interests of horticulture. The manner in which names are spelt, and the illegible manner in which they are too frequently written, constitute a charge against gardeners of being far behind the age in the most necessary elements of education. Correct names are easily obtainable from books and catalogues, and as to the labels, we cannot understand why writing should be the rule when printed cards for such subjects as roses, dahlias, and chrysanthemums could be obtained at a trifling cost, and their use would much enhance the enjoyment of an exhibition by the general public. "The garden superintendent has authority to refuse all exhibitions which he considers unworthy of being shown." We hope he will use that authority with discretion, and lean to the side of doing too little rather than too much. As to ownership, one month's possession is to be deemed sufficient. Roses shown in trusses are to be cut from the wood of the current year's growth, "*any disbudding from, or addition to, the original truss will disqualify.*" Roses that bloom singly may be shown singly, and each single rose will be accounted a truss. The dahlia-dressers may consider

themselves as hit rather hard in the clause which says, "stands containing mutilated blooms will be disqualified." In the chrysanthemum classes, "preference will be given to plants trained in the bush-like or pyramidal form," so we may look on pyramids as the fashion for 1861.

THAT cruel frost of Christmas Eve had very much its own way among the collections in private gardens. People were so heartily enjoying the society of their friends, and so many gardeners were occupied among holly and mistletoe, that fires went out, the thermometer underwent an awful depression, and soft-wooded plants literally melted as if boiled, and made the winter gardens into muck-heaps. When looking round among our neighbours next morning, we found that many nurserymen and gardeners had been up all night looking after fires, while their friends were leaving the frost and the geraniums to measure pace with each other, and the relative merits of heating appliances were tested in a way we are not used to. If we could then have dropped a word of counsel into the ears of our readers—but we could not, for the FLORAL WORLD had gone to press—we should have said: "Whatever is touched with frost keep dark and cool, and damage will be lessened if not entirely obviated." The effect of frost on plants depends considerably on the state it finds them in. Soft-wooded greenhouse plants are killed instanter if they are in a moist atmosphere and growing temperature with full enjoyment of light; but if moderately dry, and well covered so as to be almost in total darkness, very many even of the tenderest will bear a few degrees with impunity. This advice may be of use now, for we may have a smart time of it yet, before the cowslips blossom. If frost gets into a house and makes its mark on the minimum thermometer, draw down the blind, if you have one, at once, or cover the lights with tarpaulin, straw, or whatever may be at hand, to exclude the light, and be particularly careful not to get up the heat in a hurry. To raise the temperature is, of course, essential, but it will be well to keep it at about 33° for a day at least, that thawing may take place slowly. A few degrees of frost met in this way will do much less harm than is generally inflicted where the terrified cultivator heaps on the fuel, in the mistaken notion that fire is the proper antidote to freezing. The same remark holds good as to fruit. The frost got into part of our store of apples and pears, and some were frozen hard. They were allowed to thaw slowly and *in the dark*, and are now not a whit the worse for the visitation. If thawed in full daylight, they would probably have melted in the operation.

In regard to temperature, the mean of the year 1860 in the neighbourhood of London, was 46.26. On an average of sixteen years the mean temperature in the same district has been 49.25. In the January number of "Recreative Science," Mr. Lowe gives 49.09 as the mean of thirty-one years, and 48.78 as the mean of fifty-eight years. But mean temperatures are not to be relied on in connecting the records of the weather with the progress of vegetation. During hot seasons the night temperatures are often very low, so that the mean is not much disturbed, and during the past year there was less difference between *maxima* and *minima* than usual. The only month in the year during which the mean temperature was above the average was January, and the excess amounted to 1.81. In mean maximum temperatures, January, May, and October

were above the average, and the excess of these three months amounted to 5·08. The total rainfall near London was 30·08; according to Mr. Thompson, 10·73 above the average; according to Dr. Lindley, 6½ inches. On the north of London, the excess was 10·41. Reckoning from the 1st of October, 1859, to the 30th of October, 1860, the total rainfall was 38½ inches. As every district has its own peculiarities in this respect, minute differences are of little consequence in the face of the fact that the season was remarkable for cold and wet. In extreme temperatures, December 1860 distinguished itself, for in many cases, the thermometer indicated as low as — 8° on the night of the 24-25th. The mean of December was only 2½ above freezing-point. There were several periods of great gales and hurricanes. On the 27th and 28th of February the west coast was ravaged by fearful storms, which by cyclonic movements swept thence over the centre of England, and committed vast havoc among the woods of North Wales, Nottinghamshire, Hertfordshire, and Norfolk. In Nottinghamshire more than 20,000 trees were blown down. On the 3rd of October a great gale commenced on the Hebrides, which swept off the crops of St. Kildare, and traversed the greater part of Scotland, to the destruction of whole plantations, and the reduction to a desert state of many highly-cultivated districts.

LONDON has not too many lungs, yet, sad to say, one of its largest and most known is likely to be soon numbered with the things of the past. Finsbury Circus—the site of the London Institution, and some magnificent blocks of private residences—is promised an invasion by a new railway, so that the lovers of rurality in the great old city will have one green resort the less, and the population lose a valuable source of atmospheric purification. Though the majority of our readers live far away from the smoky Babel, all are directly or indirectly related to it, and have some interest in its welfare as the capital of a country which is chiefly excellent because of its homes and gardens. Therefore, we must not ignore the proposed demolition of this beautiful enclosure, and must fain express our deep regret that commercial speculation did not fix its hard gray eye on some less attractive site for the project which has caused alarm among the residents of the district, and general disapprobation throughout the City. Our contemporary, the *City Press*, treats the proposal as but too likely to be carried into effect; and, as the champion of City gardens, is in no exulting mood upon the subject. Mr. Alfred Smee, the surgeon of the Bank of England, has contributed to the *City Press* some particulars respecting the property, from which we learn the following:—

“The centre constitutes a circle planted with exquisite taste with the choicest trees, and forms a *tout ensemble* which might be admired in any part of the world. It challenges, for beauty, the garden of any square in London, and it is the admiration and astonishment of foreigners as an affair of private enterprise, and not a creation of the State. A return made by the gardener states that it contains three trees 60 feet high, and 180 feet in the circle of the head; 20 trees between 45 and 55 feet high; 34 trees between 35 and 45 feet high; 60 trees between 25 and 35 feet high; and 107 trees between 15 and 30 feet high; besides upwards of 700 fine shrubs, and several beautiful weeping trees, all of more than half a century of growth. The effect of trees in the centre of towns cannot be

too much appreciated. They carry up large quantities of water into the over-dried atmosphere, and this little forest of trees must play an important and beneficial part to the neighbourhood. At the present time the City is too crowded, and contains by far too few open spaces and trees. There are (it is true) two trees in the Bank of England, and one in Cheapside, two or three smaller ones in St. Paul's Churchyard, and a few others scattered about, but where are the trees which we possess in Finsbury Circus?"

When will the corporation of London include within its paternity the leafy and flowery life that works for ever in rendering the atmosphere fit for the support of man? There will be space in Smithfield soon where some trees might be planted, and in other places trifling outlays would add the charm of verdant umbrage to the grand architecture which is springing up on every hand in the City. How would that venerable body earn the thanks of a benefited population by an occasional tasteful planting of trees and shrubs!

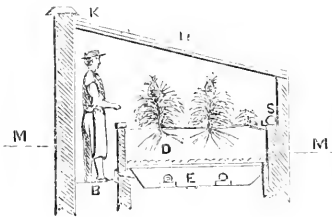
PINE GROWING FOR AMATEURS.

FORMERLY, the growth of this delicious fruit by the middle classes would, to say the least of it, have been regarded as a piece of extravagant folly; because, considering the appendages thought to be necessary, in the shape of cumbersome houses, and the staff of gardeners required to manage them, with the constant going and coming of the coal and tan waggons, the end could hardly be thought to justify the means. Consequently, the growth of them was confined principally to the gardens of the aristocracy; but this arose from the crude state of the sciences bearing on horticulture, first amongst which we may class the political economy of the time—that drag chain on social progress, when personated by the excise officer, and from whose baneful influence Sir Robert Peel, be it said to his renown, emancipated horticulture, when he secured the repeal of the glass duty, the removal of which, with the repeal of the brick duty, set free the springs of inventive intellect in the cause of horticulture; the result has been a host of inventions, cheapening, and simplifying, and bringing within the reach of a numerous class of the community, the means for producing these exotics, to which they were before strangers. These, coupled with the free and unfettered exchange of ideas, through the medium of the periodicals devoted to the science, by which means persons possessing too limited incomes to keep a regular gardener, found it possible to conduct their own gardening affairs themselves; and, at the

present day, there are few professional men, or men of business, possessing a taste for the same, who are not gardeners—at least to the extent of their own requirements. Thus many are enabled, with the aid of an unskilled labourer, to enjoy not only a good display of exotic flowers, but exotic fruits also, not excepting the pine. And here, in this article on "Pine-growing for Amateurs," I should be wanting in justice, did I not acknowledge with gratitude the service done by such men as Mr. Hamilton, of Thornfield, who, having made gardening their practice and study, have come forward so freely of late years for the benefit of us youngsters, and laid open the result of their experience. I mention Mr. Hamilton here as being the father of the "planting-out system," and the system of fruiting the suckers whilst still attached to the old stem, the system which, after having grown pines in various ways, I am about to recommend for the amateur's adoption, being satisfied that it is the simplest and safest plan for that class of persons for whom I write, namely, those who are at present unacquainted with the growth of the pine, and are not in a position to employ a regular gardener. For those who are so acquainted I need not prescribe rules, as they will follow their plans according to the end they have in view. For instance, should it be necessary to produce the bulk of the crop at one particular period of the year, it might be necessary to modify the plan I am recommending, and either have sepa-

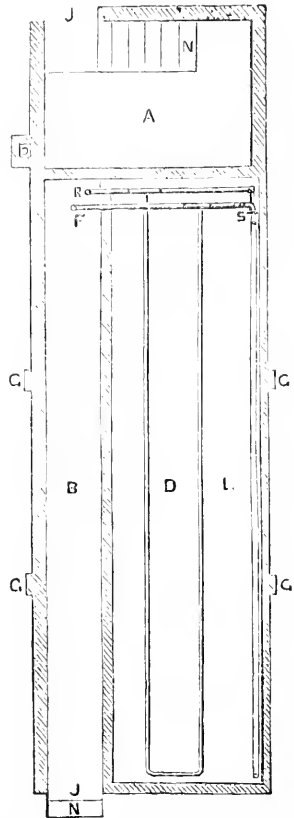
rate divisions, or practise a system of removal from one pit to another, so as to be able to start them into fruit at the particular time wished. But as this is seldom required, except by those who grow for market, I need not enlarge upon this head, but proceed at once to consider the plan by which a family may be supplied with a good pine-apple, at almost any season, without incurring that degree of care and nice management required by them on the pot system; not that I mean, by so saying, that the pine, under any system of treatment, will bear neglect or irregular attendance, but that on the "planted out" plan there is far less risk of burning, chilling, or soddening the roots with water than there is with fermenting materials in conjunction with pots; and, what is of equal importance to the amateur on the system I am advocating, they, when once established, require very little meddling

Scale ————— Feet



with, as they are to stand and perfect at least two crops from the same plant; or, to be more explicit, I should say from the plant and the suckers that spring from the side of the old stem, and which will be in progress of growth whilst the first fruit is ripening. The only thing to be done when the fruit is cut is to thin the suckers to two, if there are more than that number; indeed, it is well to destroy all above that number on each plant as soon as they are perceived. Some of the old leaves at the base of the stem to be at the same time removed, and some nice fresh earth piled round the plant, an inch or two above the base of the suckers. They will then have been placed in a position for perfecting their next fruit. Any crowns or suckers may, as they come to hand, be stuck in the front row, and there may grow on until wanted to fill some vacant place in the fruiting rows. Herewith is given a plan of the pine-pit under my charge; which, for simplicity, cannot, I think, be surpassed.

The wood plates that rest upon the walls, as also the rafters, are "red-wood deal," three inches by four inches, with a spline upon them to separate the lights, exactly as in ordinary pits and frames where the lights slide up and down. The lights used are also the ordinary kind, only having handles with which to slide them up and down with, fixed at the lower instead of the upper end. These lights are about seven feet long; the rest



A, stokery, five feet deep; B, back path, two feet wide; C, chimney, but if the fine could be carried into some other it would be better; D, bed of soil for plants to be planted in, six feet wide; E, chamber in which two-inch flow and return pipes are fixed for bottom-heat; F, flow, which is also two-inch pipe as far as S, where the stop valve is fixed; G, piers; H, sliding lights, seven feet long; these slide under the fixed lights, K, so as to admit of any necessary operations in front part of house being done from without, as well as for air. J, door; L, flow and return four-inch pipes, with vapour troughs; M, ground line; N, steps; R, return pipe.

of the roof is covered with a fixed light, under which the moveable lights slide freely for the purpose of giving air, or of carrying on necessary operations in the front part of the pit. The pit is sunk below the ground line, the better to admit of its being covered up on cold nights—a matter of considerable importance, as, by so doing, we not only save a considerable amount of fuel, but also, by arresting evaporation and radiation from the glass, preserve that degree of moisture in the atmosphere which is essential to the health of the pine.

For heating so small a house, a very small boiler would be sufficient, unless other pits or houses are attached to it, or this pit may be attached to any apparatus already at work, if sufficiently powerful for the additional work; for one large apparatus is much easier managed and more economical than a number of small ones. If, however, a small one only is wanted, a comparatively large furnace should be made, and a furnace door large enough to admit a good sized shovel, for nothing can be more trying to the temper of a stoker than the baby furnaces fixed by some country tradesman. I must, however, admit that there is danger in having a furnace large in proportion to the boiler, unless its management is understood; and, as I propose to make this matter the subject of a separate paper, I shall not here enlarge upon it.

On referring to the plan, it will be seen that a flow and return two-inch pipe is shown in a chamber under the bed in which the plants grow; this space being separated from the bed of soil above by a loose flooring of oak slabs or rough boards. These two small pipes for bottom heat, will be found to give sufficient warmth to the soil without excess, except it should be in very severe weather, when a good deal of fire heat is used in order to maintain the atmospheric heat; then, at such times, the excess can be let into the house by opening the drain-pipes, laid through the wall for that purpose, whilst in summer, when but little atmospheric heat is wanted from the pipes, bottom-heat may be given, independent of the large pipes, by turning a stop valve at S. The two four-inch pipes should have vapour troughs upon them; otherwise, it will be difficult to maintain sufficient moisture in the air for the well-being of the plants.

This structure may be of any length desired, but its width is designed to accommodate two rows of fruiting plants, and one row of nursing or succession plants in front, as a reserve from which to fill up the fruiting rows, when, from lack of well placed suckers to carry on the succession, or from becoming too tall through repeated succession of suckers, or any other cause, any of the old plants have to be removed. When such happens, the old plant is taken out, and as much of the old soil as thought to be exhausted, and the place filled up with fresh; and when it is become nicely warmed the plant from the front row is to be lifted carefully with a fork, with all the soil that can be retained about its roots, into the hole previously prepared for its reception. As on this plan the plants will not all want renewing at one time, and a succession of young ones by degrees take the place of the old ones, it is of importance that the preparations should be made with proper care in the first instance. Let then rough but lasting oak boards, not fitting too closely together, be placed over the pipes, with brick bearers at intervals to keep the soil from the pipes, and upon these a few small branches, reeds, or some such materials; then twenty inches in depth of prepared soil should be put in, consisting of two parts turfy soil, partly decayed, one part sandy peat nearly fresh from the heath, and used in a lumpy state, the other part consisting of charred refuse, or small refuse charcoal, coarse drift sand, and thoroughly decayed sheep, deer, or cow-dung. These materials may all be turned over and well mixed together, either before or as the filling-in goes on, and should not be in a wet state, neither should it be much trodden upon, for the more open it is left the better the heat will find entrance through the mass, and this will be assisted by turning the soil over with a fork; the fire, of course, being lighted as soon as the soil is in, and should be kept going for a few days before the plants are introduced, in order that everything may become warmed, and the joints of the heating apparatus well tried. When such progress have been made, planting may take place; and the sorts best adapted for this plan are those known as "Blacks," *i.e.*, Black Jamaica, Black Antigua, Emille Montserrat, Providence, Smoothed-leaved Cayenne.

H. HOWLETT.

EARLY PEAS.

SOME trials of garden peas were instituted in the gardens at Chiswick, by Dr. Hogg, last year, in order to compare the relative merits of new and old varieties, and establish the identities of some which had obtained places in catalogues under various names. The number of so-called varieties collected was 116. The whole of these were sown on the 19th of February, on ground liberally manured, and were cultivated with every care necessary to insure reliable results. Our readers do not need to be again reminded that the season was unfavourable to almost everything; suffice it that the first blooms did not appear till the 19th of May, and the first pods were not gathered till the 22nd of June. Some of the varieties grew out of character, and some of real merit failed to prove their excellence owing to the excessive rains and the state of the ground. One distinct result of the sample culture was the reduction of the 116 varieties to 70, and one half of these 70 really distinct sorts proved worthless; so that we may say, in spite of seedmen's catalogues, that our choice of really good peas lies among 35 instead of 116 varieties. As the sowing of peas is one of the important operations of the month of February, and the ground will be in beautiful tilth if we are favoured with dry weather, we will sum up in a few words all that is likely to interest our readers in respect of the best sorts for early crops.

The earliest of all early peas proves to be DILLISTONE'S EARLY, a weak grower, rising two feet on a single stem, and bearing an average of seven to nine pods, which are almost straight, same shape as Sangster's No. 1, but with a shorter and thicker neck. This sort flowered on the 19th of May, the slats appeared on the 5th of June, and the crop was fit to be gathered on the 22nd of June. A striking feature of Dillistone's Early is that its changes take place all at once, it blooms in a mass, its pods appear all together, and the whole crop is ready to be gathered at the same time. In consequence of this simultaneity of the development of the pods it does not last long, which some may regard as a disadvantage; furthermore it is not so heavy a cropper as Sangster's and Early Emperor; but it may be cleared off the ground very shortly after the first pods are ready, and to gain

ground is quite equivalent to the gain of crop, especially at the busy season of mid-summer.

The next earliest is SANGSTER'S No. 1, to which Dr. Hogg attaches these synonymes—Carter's Earliest, Isherwood's Railway, Sutton's Champion, Early Washington, Daniel O'Rourke. Sangster's No. 1 blossomed on the 22nd of May, the slats appeared on the 5th of June, and on the 29th of June the pods were ready for gathering, which places it seven days later than Dillistone's Early, a matter of no small moment to a market grower, to whom the gain of a week may make a difference of hundreds of pounds. This pea grows two and a-half feet high, bears eight to ten pods each plant.

EARLY EMPEROR stands next in point of earliness. The following synonymes are added—Early Sebastopol, Morning Star, Rising Sun. We think we could add fifty other synonymes, for this and Sangster's No. 1 are the sorts sold as A's Champion, B's Matchless, C's Incomparable, D's Defiance, etc., etc. Some seedsmen dip into the Emperor's bin for all the early sorts asked for. It is, however, a good pea, produces a more regular and rather longer pod than either of the two preceding, has less neck than either of them, and is a prime article for the table. It is reported to rise two and a-half to three feet at Chiswick; we have seen it run to four feet and bear proportionately heavier on well manured clay on the north side of London. The Emperor bloomed on the 24th of May, the pods were fit to be gathered on the 3rd of July. It is always a heavier cropper than the two preceding kinds, but eleven days later than Dillistone's, and four days later than Sangster's.

TOM THUMB (synonymes, Beck's Gem, Royal Dwarf, Nain Hatif extra) is the dwarfiest of all early peas, rarely exceeding a foot in height, stout habit, branching from the ground, each plant producing from fourteen to eighteen pods, mostly borne in pairs. The pods are smooth, dark green, well filled, and contain five to eight peas each, almost as large as Imperials. The ripe seed is somewhat ovate, and of a grayish pearly colour. These bloomed 29th of May, the crop was fit to be gathered on the 3rd of July; so that as to earliness it takes place beside the Emperor. It is a capital pea for forcing

and for sowing under walls, or in any place where sticks cannot be conveniently used. It is more prolific than any strictly early pea.

EARLY RINGWOOD (synonymes, Ringwood Marrow, Flanagan's Early, Beck's Marrow). This is one of the very best of prolific peas, and combines some of the qualities of a marrow pea with that of early produce. The plant rises three and a-half to four feet, the pods grow in pairs and singly, from within a foot of the ground to the extremity of the plant. The pod is of the same shape as Sangster's No. 1, but quite straight in the back and about twice its size; each pod contains six to eight large peas. This variety bloomed May 31st, slatted June 16th, fit to gather July 6th. It is, therefore, as early as Early Frame, or earlier if the difference of a day is of any value, the last named variety being fit to gather on the 7th of July. In the case of a crop to be gathered for a Saturday's market, the gain of a day is of no small importance, especially when instead of the commonplace pod of Early Frame, the produce is, in many respects, equal to a marrow. A great objection to Early Ringwood is the pale colour of the pod, which ought not to affect it, except for market purposes.

EARLY FRAME. There are several varieties bearing this name, but they are all surpassed, except in productiveness, by the kinds already named. It may be as well to remark, that there are no distinctive merits discoverable when single blossomed and double blossomed kinds are grown together; nor indeed are the best selected stocks absolutely true to either designation. This is a prolific pea, habit robust, plant three to four feet high. Flowered June 1st, pods fit for use July 7th.

EARLY WARWICK (synonymes, Racehorse, Essex Champion), of no particular

merit now, though at one time deservedly held in high estimation.

BISHOP'S LONG PODDED. This is an improvement on Bishop's Dwarf, grows two feet, bears eighteen to twenty pods on each plant, pods same size and shape as Dillistone's Early, but rather straighter in the back. Bloomed May 30th, slatted June 20th, ready to gather July 9th.

AUVERGNE (synonymes, White Sabre, White Scimitar). The best second early pea of the frame class in cultivation. Plant four to five feet, rather strong habit, bears from twelve to fifteen pods, generally single, sometimes in pairs. The pods are four and a-half inches long, over half an inch broad, tapering at the point, very much curved, and resembling a scimitar. The pods contain from nine to twelve peas, each very closely compressed. Bloomed June 11th, ready for use July 10th.

In this category we pass over Early Kent, Dancroft Rival, Telegraph, Dickson's Favourite, and Shilling's Grotto, as not possessing merit such as to place them in advance of any of the varieties named and described above. They have their several excellences, but must each of them occupy a secondary place when compared with varieties that resemble them in their best points. As the best varieties occasion no more trouble in their culture than the worst, we must adopt them to the exclusion of inferior kinds, no matter in how many respects they may generally resemble them. In order to enable our readers to compare the relative earliness of the varieties here described, we subjoin a table, and add this reminder, that earliness and productiveness do not invariably go together, what we gain in bulk of crop we generally lose in time, and what we gain in time is balanced by comparatively scanty produce. To select a succession from the subjoined will be a matter of no difficulty.

	Sown.	Bloomed.	Slatted.	Gathered.
Dillistone's Early	Feb. 19	May 19	June 5	June 22
Sangster's No. 1	"	"	" 5	" 29
Early Emperor	"	" 21	" 5	July 3
Tom Thumb	"	" 29	" 12	" 3
Early Ringwood	"	" 31	" 16	" 6
Early Frame	"	June 1	" 18	" 7
Bishop's Long Pod	"	May 30	" 20	" 9
Auvergne	"	June 11	" 23	" 10

PYRAMID POMPONES.

You gave me so much praise for my pyramid pompones, as shown at the Crystal Palace and at Brixton, that I am in duty bound to offer a few words of advice on the culture of specimens in that style, to the many readers of the *FLORAL WORLD* who have made inquiries on the subject; and I must first state that, so far from the portrait given at p. 262 of the last volume being in any respect an exaggeration, it was under, rather than over the mark, in the amount of bloom represented, for my plants had blooms lower down to the pot than in the picture. With such a crowd as pressed round the table all day, I can only wonder how the editor could have made his sketch at all; it is certainly faithful, and not more symmetrical than the plant. But I am not the only one who has succeeded in this mode of training, for my friends Messrs. Glover and Harper were in advance of me at Brixton, so that where the pyramids were placed on the centre table, there was a fine row of them, presenting a truly beautiful and novel appearance, and the awards were: 1st, Glover; 2nd, Harper; 3rd, Monk. It was my first attempt in exhibiting pyramids, so that of course I hope to do better yet, and am now watching my plants for 1861 with expectant interest.

The Golden Cedo Nulli, figured at page 262, was struck in the latter end of February, 1860. Now I must caution exhibitors that that is not early enough. I began for 1861 in November last, and got in cuttings as fast as they could be had, so as to have all rooted before Christmas. This is important, as if there is a sharp competition, the advantage of two months' growth will tell its proper tale; but as I began in February, last year, so those who begin this present February, may expect to produce plants as worthy of being sketched as mine were, and I dwell upon this point as one of encouragement. The twelve sorts I have now in hand for pyramids are Cedo Nulli, Golden Cedo Nulli, Bob, Adonis, General Canobert, Requiui, Helen, Duruslet, Mrs. Dix, Andromeda, Jane Amelia (one of Salter's of 1860), Ida, and Madame Fould. Supposing all goes well from the time of writing this, I hope to make my first stopping at the latter end of January, and after that, three other stoppings, for they require four in all to form good plants.

There is no mystery in getting the plants to regular pyramidal shapes, for,

if grown well, and the stopping rightly managed, the close, pyramid shape is very much a matter of tying up at the last. Therefore the first shoots after the first stop may be tied or pegged down in just the same way as for squat plants, which is an advantage, as the growers who are now pushing on young plants for squat specimens, may, if they choose, pick out a few of them for pyramids, altering the treatment a little from this time as follows:— After the first break, let the head get up six or seven inches, then stop again, and as the new shoots come, tie them out, not so squat as the first, but somewhat in the form of a fan, and all round alike. If this is not done, the lower parts of the main stem and shoots will lose their leaves; the ultimate perfection of the plant will depend on having plenty of light and air admitted through the lower branches. There must be two more stoppings between this last and July, and on each occasion the side-shoots must be topped as well as the head. After July, no more stopping, but keep the branches open till the end of September, and meanwhile, give plenty of water, sprinkle frequently overhead, and during very hot weather keep the soil about them moist, or you may lose all your lowest leaves. Amateurs who wonder how the lower leaves are kept on till the last in a beautifully fresh and healthy state, are informed that is a question of patience only, not of skill; once let the plants get burnt, neglect to give water when they really want it, and away go the lower leaves, and with them all chance of a first prize, or the high eucormiums of friends who know what *chrysanthemums* should be. The last task is to train them into close pyramids, which is strictly a mechanical affair. This should be done the last week of September, or first week of October, so as to cause the bloom-buds, as they swell, to take proper positions, so as to cover the exteriors of the plants evenly with blossoms.

The only stimulus I gave my plants was manure-water from sheep's-dung, which was used as brought fresh from the field, one peck to twelve large water-pots of pond-water. In case the reader should be perplexed as to the size of the pots, suppose we say one peck to twenty-four gallons. When one mixing of this was used, I used pure water only, and then made a fresh mixture with the sheep's-dung, so as to use pure water and manure

water alternately. I began to use the mixture when the plants had filled eight-inch pots with roots, at the latter end of June. My last shift was in the latter end of May, from 32 size pots. During very hot weather (which we were not favoured with last year), I should recommend the use of cow-manure for solution instead of sheep's-dung.

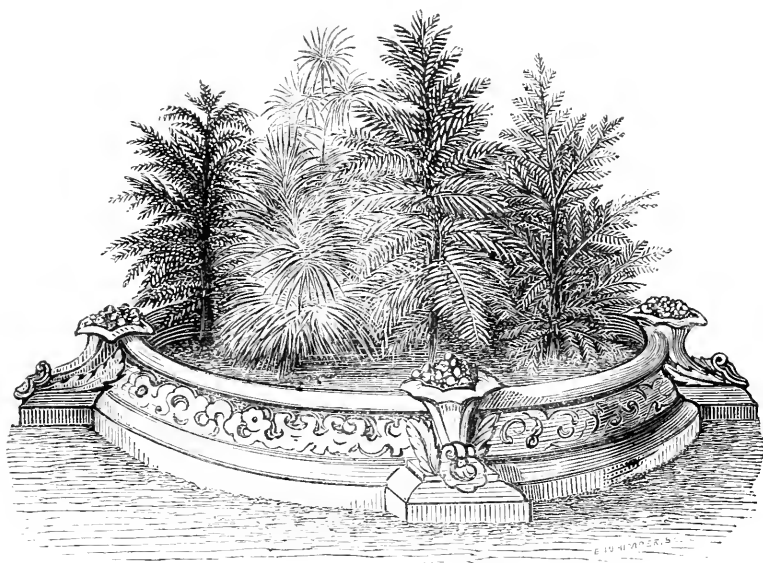
I hear with much pleasure that Mr. Shirley Hibberd intends to give a set of meteorological instruments for the best set of chrysanthemums of varieties recently introduced, at the next Stoke Newington Exhibition. The schedules of chrysanthemum societies have been too much

modelled in the same groove, and this is a move in the right direction to get out of the groove into a new and practical march of improvement. It is to be hoped that the local societies will establish classes for pyramids and standards, so as to give encouragement to all the modes of culture with which we are at present acquainted. Above all, the Royal Horticultural Society ought to set an example, especially, by encouraging pyramids, which, I believe, will eventually be pronounced preferable to squats.

J. MONK,

*Gardener to J. C. Heath, Esq.,
Bulham Hill.*

EVERGREEN BEDS.



At different times and in different ways the attention of our readers has on several occasions been directed to the subject of evergreen beds, and any one diligent in searching for useful information may find in past volumes some considerable amount of information, especially on the kinds of plants best adapted for this kind of decoration. In one sense we are in this matter only dealing with the "clump" system, under which American plants first took their proper high place in ornamental gardening. But the clump system does not

suit everybody; for instance, it does not suit me, and, as there are thousands of enthusiastic gardeners situated as I am, the plans I adopt generally prove interesting to those in the like predicament, that is, with an enthusiasm a good deal too big for the place. The idea of the clump system is the grouping of plants of a sort in large masses, and in public grounds and large private gardens it is in this style of planting we usually see the rhododendron used, and during the blooming season the beauty of such clumps

surpasses everything else in the same category to an extent not to be defined in words. The best show of open air roses ever and anywhere seen falls far below that of a good breadth of well disposed rhododendron clumps, which give the highest display of colour, character, and solidity attainable among all the classes of plants at our command for massing. Foliage, habit, the strength of the trusses, and the varieties of colour that may be used in combination and contrast, these are the points that make the rhododendron popular; and, to do justice to its merits, it should always be seen *en masse*, though it is not to be denied that fine specimen plants completely covered with bloom are as brilliant as anything we have for the decoration of lawns and for key-pieces to geometric gardens. Of course, the rose beats it when we come to an examination of details. A single bloom of Anna Alexieff or Leon des Combats will give as much pleasure, and of quite a different kind, as the spectacle of an American garden in its highest state of bloom and perfection. But there is a need everywhere for certain substantial features in gardens. In the "Town Garden" I have even ventured to insist on the necessity of such features in the smallest places as preferable to the assignment of any large extent for bedders and herbaceous plants; in fact, there must be masses of shrub in every attempt at the *gardenesque*, and the rhododendron must have first place because easily grown, various in character, unequalled for the richness of its leafage, and, for a short season in the early summer, profuse in its display of colour.

Several correspondents who have written lately, are, I see, in want of features of this sort under circumstances very similar to my own. I have always maintained that roses near the drawing-room window were, like the "weeds" in Johns n's Dictionary, "in the wrong place." Beautiful all the summer long, many of them get very bronzy and russety about the foliage towards autumn, and during the whole of the winter—say for five months at least—are the ugliest objects in creation. Why should we give to the blackbirds that which was meant for mankind, namely, the beauty of vegetable forms? Why plant the Americans afar off, and keep the roses where, for nearly half the year, they stand like shivering skeletons to prove that beauty is but skin deep. Yet, though I have so stubbornly, and in the defence of Art as applied to gardening, advocated the removal of the queen of flowers, my

own special choice of all the subjects that engage my attention, to a distance from the house and its windows, yet my head was so turned when *Spergula pilifera* came into the field, that I planted roses under my own windows in order to have a circle of the *spergula*, like an emerald carpet, to enclose them. I repented. When winter came I said that, "Don't do as I do, but do as I tell you," was after all a very excellent adage. The roses were removed, the soil was taken out eighteen inches deep, and two waggon-loads half silky loam and half turfy peat were chopped over in it, and the bed planted with Americans. When I speak of people being circumstanced as I am, I mean this: I have so little garden ground that I cannot grow a hundredth part of the things I should like to grow, and to make the best of it I am obliged to be content with few specimens in order to make as much room as possible for species and varieties. So in planting this thirteen-foot bed in the circle of *spergula*, I determined to crowd into it as much variety as possible, and yet to preserve unity of character, for heterogeneous mixtures are abominable. Let us, then, go over the list of plants used, and those correspondents who are planting evergreen beds will obtain therefrom an index of kinds suited to such work.

Centre, one large plant of *Rhododendron Ponticum variegatum*. First circle, next the variegated *Ponticum*, four *Azalea Pontica*, which, though leafless all winter, do not obtrude themselves upon the eye at that period. These are magnificent when in bloom, being then a dense mass of the brightest gold yellow. In the same circle with the azaleas are intervening plants of *Rhododendron Tauricum*, which begin to produce their little purplish lilac blossoms in February, continuing to June. The next circle is more mixed, and consists of *Kalmia latifolia*, *Kalmia angustifolia*, *Andromeda pulverulenta*, *Andromeda polifolia*, *Rhododendron Cataubiense*, *Ledum palustris*, half a dozen Ghent Azaleas of various colours, and hybrid rhododendrons to make up. There is room then for another outside circle of large plants, and they consist of *Andromeda floribunda*, *Ledum buxifolia*, *Ledum thymifolium*, *Rhododendron hirsutum*, *ferrugianum*, *myrtifolium*, *Kalmia rubra* (this is one of the most perfect gems in the whole catalogue of Americans), some more *Kalmia latifolia*, small plants, with hybrid azaleas and rhododendrons to fill up. Most of the species are in pairs or threes, regularly placed, with the named kinds between

them. The outside edge is made up with a collection of little curiosities, with the exception of a fine pair of *Rhododendron Cunninghami*, a dwarf growing white flowered kind, which spreads laterally into a dense mass of dark and striking foliage. Wherever rhododendrons are grown, this should be used in the front line, because of its distinctness and splendid character. The little plants on the outer edge consist of *Menziesii polifolia*, *Mitchellia repens*, *Rhododendron ellipticum*, *Vaccinium oxycoccus*, *V. Catesbeii*, *V. vitis Idea*, *V. macrophyllum*, *Polygala chamaebuxis*, *Gaultheria Shallon*, and *G. furens*, *Pernettya phyllifera*, *Empetrum nigrum*, *Escallonia rubra*, and *Menziesii alba globosa*.

Altogether, there are not less than ninety plants in this bed, and it is by no means so thick as it ought to be to screen the soil entirely from the sunshine. Time will bring the matter right, and the thicker the plants grow the more certainly will they prosper for at least four or five years to come, and then to thin them will be an easy matter, and the plants gained will pay for the operation. But these do not constitute the whole of the tenantry. At regular intervals, all round, in small gaps left for the purpose in the original planting, are sets of *Lilium longifolium*, *Lilium lancifolium*, and *Gladioli gandavensis*, and near the outside edge occasional small clumps of *Sisyrinchium anceps*, a pretty dwarf iris, which ought always to have a place in peat-beds rather than in mixed borders, as much because it revels in the same degree of moisture as Americans require, as for its preference of peat and leaf-mould over all other soils. It would be too tall, reaching seven or eight inches when in bloom, for the extreme edge in such an arrangement as this, but placed just so far back as to be able to peep through the dense green of kalmias and rhododendrons, its graceful grassy foliage and bright blue blossoms are most elegant and appropriate. This bed is sunk below the level of the *Spergula* about two inches, so that all the rain that falls in it is retained; the bottom is a moist tenacious loam, inclining to clay, which is the staple soil here, and no American will venture to make root into it.

In the composition of the bed there is decided unity though the materials are so various. The only objection that I can raise against the planting—and I criticise my own work more severely than I do other people's—is the intermixture of azaleas, which, being deciduous, show a few sticks in winter time if you positively look for

them; otherwise, the evergreen foliage being dense and harmonious in its several shades, from the glaucous green of *Kalmia angustifolia*, to the intensely deep olive of *Rhododendron Cunninghami*, the deciduous plants are not readily detected. This arrangement subserves three distinct purposes; first, the bed is at all seasons an agreeable object, and inclusive of the *Spergula*, makes a fine circle of twenty-three feet diameter, the outer zone of which is a dead level raised above the surface of the adjoining turf, at all times bright with the verdure of the carpet plant, and for some time during summer agreeably spangled with minute starry snow-white blossoms. Another purpose is the securing of bloom the whole of the summer, for *R. Taurica* leads the way in February, the azaleas follow, the general mass of the rhododendrons come to their best before the azaleas are exhausted, and after these succeed the lilliums and gladioli, while among the Americans there are some that continue in bloom almost to the end of the summer. The third purpose served is the bringing together in a small compass the greatest possible variety as representatives of different sections of the interesting order Ericaceae, every one of which is an object of botanical interest as well as of floral beauty, proving that plants may, to some extent, be arranged botanically without violating taste in gardening. There are as many as ninety plants, counting the bulbs as such. These of course require only just enough room to push through between the shrubs. The species and varieties amount to thirty-eight, counting all the hybrid rhododendrons and azaleas as one each. As these latter are all different, the species and varieties are, strictly speaking, about forty-eight in number, a sort of miniature botanic garden. Once planted there is an end of all trouble for some years afterwards, as none of the bulbs need be taken up until the clumps get too large and the bed too crowded, and then it is but a matter of taste, not of trouble, to rearrange them, for there is no class of plants that lift better than Americans, or that thrive with greater certainty if properly dealt with in the first instance.

The first necessity in planting these beds and clumps is good peat. If you cannot get that be cautious. Ponticum rhododendrons may be planted in almost any soil except chalk, which is poison to them, but other kinds must have real good peat, or a mixture prepared with judgment as a substitute. I may remark here that I have a set of *Kalmia latifolia* planted two years since in artificial peat, prepared ac-

ording to the directions I gave in the *FLORAL WORLD* for 1859, p. 11, and they are in the most thriving condition. If *Kalmias* will stand it, less delicate peat plants certainly will, but the mixture must be thoroughly rotted, quite sweet, friable, and clean, else it becomes infested with fungous threads, and the plants either languish or die outright.

Passing over the Berberies, Chinese privets, *Griesslinia littoralis*, *Skimmia Japonica*, and other plants suited to the formation of American beds, let me direct the attention of amateurs to conifers, as admirably adapted for the purpose, and which may be dealt with in the botanical fashion, and very interesting collections got together in a small compass. Grown in pots until they grow to too great a size, they can be plunged anywhere in groups to ornament beds and borders during the winter; and when flowers are to take their places, it is a simple matter to remove them and form them into banks in other parts of the garden, or if the place is too crowded to allow of it, room must be had to plunge them in the reserve ground till wanted again. The sketch which accompanies this article was taken from Mr. Ransome's *Jardinier* when stocked with conifers. The sorts I have found effective for grouping in this way are *Abies deodara*, a beautiful centre-piece; *Abies Menziesii*, of no use singly, but to be used in sets of two or three, with other sets intervening; *Libocedrus Chilensis*, the delicate silvery leaved *Thuia* of Chili, *Pinus insignis*, which, unfortunately, always turns brown after severe frost, but is very distinct and striking as long as it keeps its colour; *Pinus cembra*, a very slow-growing species, exquisitely beautiful, and capital to repeat at intervals along a front line, or on the outside edge of a circular bed; *Cephalotaxus Fortunei*, the handsomest of all the yews we have, and remotely resembling ostrich plumes in its graceful half-pendant branches; *Abies rubra*, *Abies Orientalis*, the latter an extravagantly dense fir, which literally kills its lower branches by the intermixture and crowding of its upper ones, very dwarf; *Juniperus Hispanica*, excellent in match pairs, the growth similar to

Irish yew, the foliage neat, dense, and slightly silvery; *Juniperus Phoenicia*, more beautiful and more costly than the last named; *Wellingtonia gigantea*, which is a good conifer for pot culture if regularly pinched at the points of the shoots in the growing season, to cause side breaks. I have about forty others in my own garden list, but must defer naming them till next month, because my space is more than run out. I can only add here, for the information of those who are purchasing now, that a mixture of turfy peat and yellow loam, equal parts, is the best soil for conifers in pots. If peat is scarce use half leaf-mould and half loam, the leaf to be thoroughly rotted and quite sweet. Not a particle of any animal manure should find its way into the soil for conifers. A spadeful of dung on the roots of a pine or fir will generally prove sufficient to cause disease, from which the tree may perish; and probably many of the losses that have resulted from the mycelium of fungi, might be traced to the admixture of manures with the soil, at some period antecedent to the planting. Pure loam, if well pulverized, will serve very well for the commoner kinds, but it should be rather plentifully mixed with sand, and a moderate quantity of small charcoal may be added to render the whole light and porous, and prevent souring. Plenty of drainage, and pots no larger than the roots can be got into without cramping, are important points, as it is better to give a shift a year after potting than to overpot in the first instance. Most of my best plants are in twelve inch and fifteen inch pots; when they outgrow these latter, they must be turned out, and if you have no room for them as your stock increases, you will have no difficulty in finding purchasers if the trees are in health, for they are then of just the right size to produce what the nurserymen call "immediate effect," and may be planted out without the least risk as to their ultimate success, which is not the case with large trees taken up from the nurseries, and of necessity injured at the roots by the process. SHIRLEY HIBBERD.

WEATHER PROGNOSTICS.

SOME of the signs of the weather mentioned by Mr. Chambers, which are known here, and found useful, it may be well to particularize, both because that gentleman wishes for a verification of his, and because

the few about to be described are easily remembered.

A ruddy sunset, or a neutral gray colour of the whole sky in the evening, presages fair weather. The same in the

morning presages foul weather. See Matt. xvi. 2, 3.

A pale yellow sky in the evening indicates wet.

A bright yellow sky in the evening indicates wind.

White sunshine, morning or evening, is an infallible sign of the coming or continuance of wet weather. The colour of the sunshine appears very conspicuously on the wall of a room.

Generally,* when the wind goes with the course of the sun, that is, from left to right as one looks at it, and so on by the

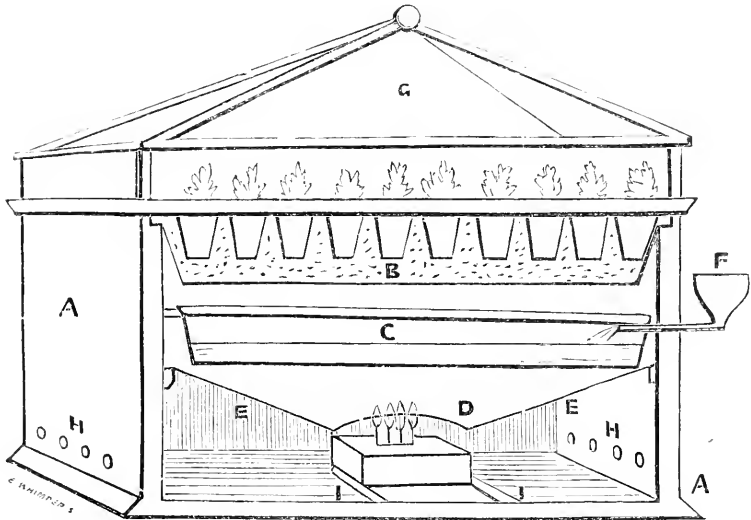
west and north round to the east, fair weather may be expected. A trifling exception to this is that when, in the above course, the wind overtakes the sun and passes it, some light showers occur, which are of little account in this country; but in Central Germany, where the same rule has been observed by the writer to hold good, these showers are heavy plumps, lasting for a couple of hours.

The outlines of distant hills appearing distinct and clear, is another infallible and easily recollected sign of rain.

Pembrokeshire.

A. B.

A FRENCH PROPAGATING CASE.



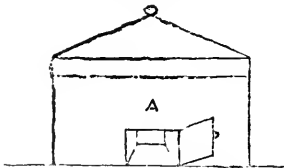
I HAVE much pleasure in sending you a sketch of a propagating case, which was made from a description in the "Bon Jardinier," Vol. iii., and which I have used

indicated in the description which follows. The materials I have used for packing the pots in are fine gravel, sawdust, cinders or powdered charcoal; sand, perhaps, would be the best, because retaining moisture and always clean.

The measurement of my own case is 20 inches square, 1 foot high. It is made of deal and lined with zinc. The glass frame is improved by having one of the squares made to open for occasional ventilation.

Harpenden.

A. S. W.



with unvarying success for several years to propagate plants from seeds and cuttings. The heat is sustained by means of an oil lamp, and the various parts of the case are

* I say "generally," because before a long, determined set in of wet weather, this rule does not hold good.

A, square wooden box, lined with zinc; B, zinc frame, perforated with small holes; C, tin or copper pan for water; D, lamp with four burners; E, diaphragm of zinc to confine the heat to the water; F, funnel for filling the pan; G, glass frame, of which one pane may open or not; H, holes to admit air; I, grooves for lamp to be pushed in by.

THE POULTRY-HOUSE.

WARMTH is very essential to fowls, cold rendering them torpid, retarding and diminishing their laying; but too much heat enfeebles them. White hens are more tender, and require to be kept warmer than the dark coloured. It is desirable that the walls of the poultry-house should, if possible, receive a little heat from a chimney or flue in some part of the dwelling, which in some cases may be effected with a little contrivance; and it is not well that the poultry-house should be too large for the number of fowls, as they rather prefer being a little crowded together, on account of the warmth they receive from each other: but ventilation should not be neglected, as bad air generates disease. The walls are best of brick, and may be built hollow, the better to confine the heat; a window is best to the east, and another to the west, with wired lattices and shutters to close in very cold weather. Roosting perches or rails should be placed in convenient situations in the poultry-house; and they should not be round, nor smooth, but nearly square, and somewhat rough, of a size suitable to be grasped by the claws of the fowls. It is important that every part of the building should be finished close without crevices, to prevent the entrance of vermin, and the inside should be frequently whitewashed with hot lime; it is necessary to observe that the utmost cleanliness is essential in a poultry-house. The litter of the nests and the dung should be frequently removed, for no poultry can thrive where this is neglected; the brick floor should be washed every week. Coops for fattening are likewise requisite, with a trough before for food. Nests are sometimes fixtures, and may be built against the wall, either in one tier or several, according to the number of fowls and the size of the house. When there is more than one tier, each of those above the ground must have a projecting shelf at the bottom, for the fowls to reach the nests by, and a slanting board leading to it with slips of wood nailed on. Moveable nests are also occasionally useful. These nests should be well cleaned out with hot lime-water after every hatching, to destroy the fleas which infest poultry, and which are not only annoying to them, but also to visitors. It is sometimes necessary to separate some fowls from the rest; such as those which are diseased, which are liable to be ill-treated by the rest, as also strangers, and fowls of particular breeds.

Coops and cages are useful for this purpose, which may be made in various ways, Pens also may be provided made of lattice work, each for a cock and four or five hens to be in during the day to enjoy the fresh air, and yet be protected from bad weather; and these may serve instead of a poultry-yard, when but a few fowls are kept. Places for shelter in case of rain are necessary to be provided; in short, it is of great use to make their abode not only healthy, but agreeable to them, in order that they may remain stationary and quiet, and lay and sit when it is desired; as fowls, if they are dissatisfied with their position, are apt to lay in secret places, where it is not always easy to discover their eggs. Among other conveniences in the poultry-yard, there should be a small plot of grass or clover planted here and there, if there is space enough; and a few heaps of gravel, sand, or ashes, for the fowls to roll themselves in and cleanse their feathers from vermin.

Poultry eat a great variety of food, all kinds of grain and seeds, and preparations made from them, also most sorts of vegetables, raw or boiled; and they are fond of a certain quantity of animal food, raw or cooked; insects and worms, grubs and maggots, they search for and devour with avidity, and some persons collect these on purpose for them. Potatoes form some of the most economical food, but it is essential not only that these should be boiled or steamed, but that they are given warm, for fowls dislike them if cold. In many houses there are many well-known scraps and refuse that will serve for fowls, such as crumbs of bread, fragments of pies and puddings, and even bits of meat and fish, and vegetables, such as lettuce, endive, cabbage, spinach, turnips, carrots, chickweed and grass. It is generally necessary to give them some kind of grain, as wheat, barley, oats, rye, buckwheat, and maize, or meal made from them mixed into a paste with water. Rice they are fond of at first, but soon tire of it; and much oats, Mowbray says, is apt to scour.

[We have been favoured with the above as a reply to some correspondents who have made inquiries on the subject. It may prove useful to our readers generally, but it must be understood that we cannot give the subject any further place in these pages.—Ed.]

RIGHTS OF TENANT AND FREEHOLDER.

“RIGHTS AND WRONGS: A Manual of Household Law,” by Albany Foublanque, just published by Messrs. Routledge, claims our notice, on account of the plain manner in which it sets forth the respective rights of tenant and freeholder as to the appurtenances of the household and the garden. We are so often asked about the legality of removing trees, greenhouses, etc., that we have extracted from this able work a chapter on the subject, which sets the question at rest, so far as it can be set at rest on individual authority. We recommend every household to become possessed of this admirable work, which treats at length and in the most familiar manner all the rights of the subject, in the several relations of husband and wife, parent and child, master, apprentice, servant, ward, debtor and creditor, insurance, disposition of property, and the rights of tenants and others in regard to game. As respects gardeners and gardens, the following needs no comment:—

Whatever is fixed to the freehold (that is to say, to the soil or fabric of a building), becomes a part of it, and is subject to the same right of property as the land itself. Whenever a tenant has permanently affixed anything to the demised premises during his term, he can never again sever it without the consent of his landlord. By making it a part of the freehold he has abandoned all further right to it, and must keep it in proper repair, as though it were part of the premises originally let to him. In order, however, to bring this rule into operation, the improvement or the addition in question must be *affixed to the freehold* by being sunk into the soil, or permanently attached to the buildings upon it. Things that rest upon the ground, or are only slightly attached to walls, etc., may be removed. Thus, even such large erections as barns, granaries, sheds, mills, etc., if built upon blocks or pillars, or that rest upon the ground by their own weight, are not fixtures, and may be taken away by the tenant at the end of his term, like any other moveable. In the present state of the law it is very difficult to say what things are fixtures and what are not; it all depends upon the purpose for which they are intended, and the manner in which they are erected or fastened. To the general rule above stated there are some exceptions, not founded, indeed, upon any settled principles, but created by the disposition of our judges to modify, as far as was practicable to the exigencies of modern life, this relic in the old feudal law, and to remove some of the hardships

its rigorous enforcement could not fail to impose upon tenants. The exceptions embrace three classes of chattels, which I will consider in this order:—

1. *Fixtures for the Purposes of Trade.*
2. *Fixtures for Agricultural Purposes.*
3. *Fixtures for Purposes of Ornament.*

1. *Fixtures for the Purposes of Trade.*—A tenant may remove anything that he has fixed to the freehold (if the removal be not contrary to any prevailing practice), when the articles can be separated without causing material injury to the estate, and where in themselves they are chattels, or at least have in substance that character, independently of their union with the soil; in other words, where they may be removed without being entirely demolished, or losing their essential character or value. Another test of what is, or is not, a trade fixture, is this: was it erected for the permanent and substantial improvement of the dwelling, or merely for a temporary purpose, or the more complete enjoyment and use of it as a chattel? Take, for example, the case of a grocer, who throws a new front to his shop, with plate-glass windows, and erects a steam coffee-mill upon his premises. The new front is let into the foundation of the house, and cemented to the wall, the new mill is fastened with screws to the beams above, and bystanchions sunk into the stone floor below, firmly secured by molten lead being poured into the holes. The shop front is fixed to the freehold; it cannot be removed without demolition; it is erected as a permanent and substantial improvement, and as such it must remain. The steam coffee-mill is also affixed to the freehold, but it is there for the purposes of trade, and is attached to the freehold merely to give it the necessary stability. It is a chattel as it stands, not a part of the premises, being only fixed to them, that complete use of it may be had. So, in like manner, cider-mills, steam and water-engines in collieries, stocking-knitting frames, cotton-spinning mules, vats, salt-pans, soap-boilers, etc., fixed and used for the purposes of trade, as well as the houses and sheds erected over them for their protection, are all deemed tenants' trade fixtures, and may be removed. If, however, the demised premises have been substantially and extensively added to, if such things as lime, pottery, and brick-kilns, wind or water-mills, workshops, store-houses, furnaces and flues of smelting or glass-houses, stoves, and floors of smelting-houses, etc., have been added, although solely for the purposes of trade

and manufacture, they become part of the freehold. Sometimes an erection is half moveable and half not. Thus a tenant who had sunk a stone foundation into the soil and on it (secured by moveable pins) had placed a barn, was allowed, upon the expiration of his lease, to take away his barn, but not the building upon which it rested. Again, there are things which are fixtures, removable with some persons and not with others. Thus a gentleman who builds a conservatory against his house, and plants trees and shrubs in his garden, may not pull down the one nor dispose of the other, but a nurseryman who does the same thing to a far greater extent may remove and sell his stock, though growing in the earth, and also the erections he has made for the purposes of his trade.

Those things which are necessary parts of fixtures, and in the absence of which that to which they belong, is deprived of its use and value, are, though frequently completely severed from the freehold, fixtures in themselves. Thus, keys of locks fastened in doors, etc., are fixtures.

2. *Fixtures for Agricultural Purposes.*—The law relative to these is contained in the statute 14 and 15 Vict. c. 25, s. 3, by which it is enacted, "That if any tenant of a farm or land shall, after the passing of this Act, with the consent, in writing, of the landlord for the time being, at his own cost and expense, erect any farm-building, either detached or otherwise, or put up any other building, engine, or machinery, either for agricultural purposes, or for the purpose of trade and agriculture (which shall not have been erected or put up in pursuance of some obligation in that behalf), then all such buildings, engines, and machinery, shall be the property of the tenant, and shall be removable by him, notwithstanding that the same may consist of separate buildings, or that the same, or any part thereof, may be built in, or permanently affixed to the soil; so that the tenant, in making such removal, do not in anywise injure the land or buildings belonging to the landlord, or otherwise do put the same in like plight and condition, or as good plight and condition, as the same were in before the erection of anything so removed. Provided, nevertheless, that no tenant shall, under the provision last aforesaid, be entitled to remove any such matter or thing aforesaid, without giving to the landlord or his agent one month's previous notice, in writing, of his intention so to do, and thereupon it shall be lawful for the landlord, or his agent on his authority, to elect, to purchase the matters or things so proposed to be removed, or any of them, and the right to remove

the same shall thereby cease, and the same shall belong to the landlord; and the value thereof shall be ascertained and determined by two referees, one to be chosen by each party, or by an umpire to be named by such referees, and shall be paid or allowed in account by the landlord, who shall have so elected to purchase the same."

3. *Fixtures for the Purpose of Ornament.*—These have long been allowed to be taken away by the tenant at the expiration of his lease, but if erected as *permanent improvements*, they must remain. Thus, carpets, looking-glasses, book-cases, window-sashes, that are neither hung nor headed into frames, but merely fastened across them by laths, to prevent them falling out, pumps, only slightly attached to the premises, etc., belong to the tenant, and may be removed. But a conservatory erected on a brick foundation, affixed to and communicating with rooms in a dwelling-house by windows and doors, cannot be removed.

The following list of things that have been held to be and not to be removable, I have taken from Mr. Chitty's work upon the law of contract:—

I.—LIST OF THINGS HELD NOT TO BE REMOVABLE.

Alcove-bar	Hearth
Barns fixed to the ground	Hedges
Beast-house	Improvements, permanent
Benches	Jibs
Box-borders*	Keys
Carpenters' shop	Locks
Cart-house	Mill-stones
Chimney-pieces, not ornamental	Partitions
Conservatories	Pigeon-house
Doors	Pineries (substantially attached)
Dresses	Pump-house
Flowers*	Racks in stables
Fold-yard walls	Strawberry-beds
Fruit-trees*	Trees*
Fuel-house	Waggon-house
Glass windows	

II.—LIST OF THINGS HELD REMOVABLE (NOT BEING TRADE FIXTURES).

Arras hangings	Cabinets
Barn set on blocks	Chimney-backs
Beds fastened to ceiling	Chimney-glasses
Bells	Chimney-pieces, ornamental
Bins	Cider-mills
Blinds	Cisterns
Book-cases	Clock-cases
Buildings set on blocks, rollers, pillars, etc.	Coffee-mills
	Cooling-coppers
	Coppers

* Except by nurserymen.

Cornices (ornamental)	Mills laid on brick foundations	Wainscot fixed by screws	Water-tubs Windmills on posts
Cupboards	Ornamental fixtures	III.—LIST OF THINGS DECIDED, OR SAID TO BE REMOVEABLE.	
Dutch barns	Ovens	Accessory buildings, <i>i. e.</i> , accessory to a removeable utensil	Machinery let into caps or stops of timber
Furnaces	Posterns, erections on	Brewing vessels and pipes	Partitions
Furniture, fixtures put up as	Pier-glasses	Cider-mills	Plants and pipes of brewers, distillers, etc.
Granary on pillars	Posts	Cisterns	Presses
Grates	Presses	Closets	Pumps
Hangings	Pumps slightly attached	Colliery machines	Reservoirs
Iron backs to chimneys	Rails	Coppers	Salt-pans
Iron chests	Ranges	Counters	Shelves
Iron malt-mills	Sheds	Cranes	Shrubs planted for sale
Iron ovens	Shelves	Desks	Soapworks, fixtures in
Jacks	Sinks	Drawers	Steam-engines
Lamps	Slabs of marble	Dutch barns	Stills
Looking-glasses	Stoves	Engines	
Malt-mills	Tapestry	Fire-engines	
Marble chimney-pieces	Tubs	Iron safes	
Marble slabs	Turret-clocks		
Mash-tubs	Vessels, etc., on brick-work		
Mills on posts			

VINE-GROWING IN A NUTSHELL.

NOTWITHSTANDING all that has been written on this subject, vine-growing may be said to be comprised in a nutshell. The three following points form the root and branch of the whole matter:—1. The texture of the border should be such as not to injure by decomposition or otherwise the fibrous roots which tenant it; whilst the materials of which it is composed should be of the most permanently nutritious character. As much foliage should be allowed as can be well exposed to light. 3. There should be a constant circulation of air night and day, winter and summer, in proportion to the season and the requirements of the plants. It will at once be seen that vines thus treated must have plenty of good fi-

brous roots, and sound, healthy, well-ripened wood. This is the point at which every gardener should aim. He may rest assured that if he can secure healthy vigorous vines they will not fail to reward him with abundance of first-rate fruit. A most successful grower in my neighbourhood acts upon the following maxim:—"Upon the free, healthy growth of the vine this year depends the supply of grapes next season." The late unpropitious weather has incontestably proved the soundness of the practice. The vines are remarkably strong and healthy, and both Muscats and Hamburgs have ripened and coloured splendidly.—*Gard. Chron.*

A FAILURE IN TIFFANY.

KNOWING that your recommendations of tiffany were made in perfect good faith, and supposing that you sufficiently knew your correspondents, I erected a tiffany-house according to your directions last autumn. It was twenty-one feet by twelve, a lean-to, ten feet high in the middle of the slope, covered and sided with the best sort of Shaw's Tiffany, and boarded to the height of three feet from the ground. I wish to give my testimony that it proves

an utter failure, absolutely worthless for the keeping out of frost. Of course frosts so severe as those of this winter would penetrate any structure, but that is not the point, *the tiffany will not keep out any frost.*

I have constantly tested the temperature, having a thermometer hung outside and one inside the house, and I find that the temperature within is never more than from half a degree to a degree higher than that without. No doubt, when a night

frost comes on very sharp and sudden, the tiffany, by impeding circulation, delays the lowering of the inner temperature, but not more than a few hours: let the frost continue through a night, and in the morning I find the two thermometers standing within one degree of each other.

Of course it is not pleasant to own one-

self gulled, but I publish my own disappointment and loss that others may have the advantage of my bought experience, and eschew tiffany as a hoax. I mean to glaze my house, which fortunately I had regularly framed, and not made of larch poles.

P. H. Gosse.

Torquay, January 22, 1861.

BEST OLD DAHLIAS.

White.—Queen of Whites, Fanny Dodds, White Standard.

Light Shaded and Tipped.—Lady Popham, Annie Salter, Rachel Rawlings, Miss Pressley, Village Gem.

Yellow.—Yellow Beauty, King of Yellows, George Glenny, Goldfinder, Peerless.

Orange and Buff.—Robert Bruce, Orange Perfection, Cherub, Lady Franklin.

Crimson.—Lord Palmerston, Lord Bath, Sir F. Bathurst, Sir R. Whittington, Duc de Malakhoff, Triomphe de Peaq, King, Captain Ingram (dwarf), Ablet's Incomparable.

Scarlet.—Sir James Watts, Sir C. Napier, Scarlet King, Royal Scarlet, Sir R. Peel.

Rose.—Colonel Windham, Princess, Mrs. Edwards, Rosea elegans, Elizabeth.

Yellow and Orange Tipped.—Beauty of the Grove, Fanny Keynes, Mrs. Church, Dr. Gully, Constancy, Mrs. Legge.

Dark.—Midnight, Eclipse, Standard Bearer, Lord Bath, Lord Fielding, Merveille, Grand Sultan, Commander, Richard Cobden.

Striped.—Butterfly, Enchanter, Souter Johnny, Le Defi, Marc Antony, Mrs. Seacole, Charles Perry, Vasco de Gama.

Tipped or Edged.—Baron Alderson Jupiter (fine, but uncertain), Attraction, Countess of Bective, Empereur de Maroc (uncertain), Imperatrice Eugenie, Elizabeth, Rosy Morn, Lady Paxton, Miracle.

Curious.—Carnation, Oliver Twist, Rawlings' King, Egeria, Lollipop.

QUINCE MARMALADE.

LET the fruit hang on the tree till one falls to the ground; then gather the crop. Pare, quarter, and core them; but scrupulously save every pip. The pips of quinces abound in mucilage, as may be perceived by taking one into the mouth and chewing it, when it will make the lips stick together as a piece of gum arabic would. Put the quinces with the pips into a stew-pan, with a sufficiency of lump sugar, and just enough water at the bottom to keep them from burning. As the sugar dissolves and the liquor boils, continue stirring the whole mass. When the fruit becomes tender, break and mash it well with a spoon. In about an hour from the commencement of the operation, it will be enough. It may then be turned out into preserve jars; a portion should be put into shapes, to be used at dessert in the same way as bullace and damson cheese. The next morning it ought to be perfectly stiff and gelatinous, from the strong mucilage of the pips having been thoroughly incorporated with the whole mass. The quantity of sugar used may be rather less than is necessary for other preserves. If tied down the usual way it will keep good for a long

time. The medicinal qualities of this preparation are applicable to those cases in which mucilage is administered internally; and a pot of Quince marmalade would be as agreeable a prescription to a dysuretic patient as a dish of roasted onions or a dose of linseed jelly. Everybody whose garden or orchard is above the very smallest size ought to have at least one quince-tree, particularly if it contain any low moist corner. To such a situation they may be removed at a considerable size; their cost at the nursery is trifling, and many a useless shrub, such as the snowberry or the privet, might advantageously be uprooted to make way for them. Few low-growing standards are more ornamental. In a small space they exhibit all the members and proportions of a full sized tree; something like the Chinese Koo-shoo, or artificially dwarfed oaks, hornbeams, etc., that are grown in pots: there is the old-looking trunk, the pendant and grotesquely contorted branches; there is the scattered foliage, like the natural day, dark one half and light the other; in the spring there are large, delicate blossom, and in the autumn drooping fruit.

NEW BEDDING AND BORDER FLOWERS.

Those distinguished by an asterisk (*) have not been seen by the writer, and the descriptions of them are those of the continental and other growers.

NEMOPHILA ATOMARIA OCLATA.—The original *N. atomaria* has white flowers, dotted with dark blue, but a variety of it exists known as *cœlestis*, in which the flowers are suffused with pale blue, and the specks are scarcely evident except near the centre of the flower. This plant differs from it only in having a large blackish purple blotch, with a jagged outline at the base of each lobe of the corolla, the five spots forming unitedly a conspicuous eye to the flower. As a hardy annual of the easiest possible cultivation, and striking aspect, we are confident this plant is destined to an extensive popularity, and that, unlike so many of the ephemeral novelties for which the public are indebted to the cupidity of unscrupulous growers, it will be a permanent addition to the list of bedding and border plants. It was raised by Mr. Burridge, of Colchester.

AGROSTEMMA CÆLI-ROSA PURPUREA.—This pretty variety is reputed to be a hybrid, but as it differs from the species only in its deeper colour, approaching to crimson, it is probably but a seminal variation. In any case it well merits notice, the richness of colour in some of the plants being very remarkable, and when completely fixed it will undoubtedly quite supersede the original *cœli-rosa*. It will probably be offered in some catalogues under the name of *Viscaria cœli-rosa hybrida*.

***AQUILEGIA VULGARIS CARTOPHYLLOIDES.**—Described by the London Horticultural Society as a very pretty double-flowered variety of the common Columbine, with white blossoms variously striped with reddish crimson, and here and there with reddish-purple, producing an effective variation. The seed is mostly of a very pale brown colour, or sometimes greenish, instead of being black, as in the ordinary varieties.

***CHRYSOSCIAS FLORIBUNDA.**—This is described as a handsome climbing plant, with elegant foliage and large yellow flowers. It belongs to the leguminous tribe, and is, we believe, a native of Southern Africa.

DIANTHUS HEDDEWIGII IMPERIALIS.—This novelty is a hybrid, obtained by fertilizing the variety of *Dianthus sinensis* known as *imperialis* with the pollen of *D. Heddewigii*. The resulting plants are intermediate in habit to the parent, being more robust than *imperialis*, and with flowers as

varied in colour, and as large as those of *Heddewigii*, many of the flowers being semi-double.

ENGELMANNIA PINNATIFIDA.—This very desirable Texian composite is far from being a novelty, but it seems to be so little known, that we notice it here with a view to draw attention to it. It grows about three feet high, with erect, corymbosely branched stems, oblong, lobed foliage, and numerous bright yellow flowers more than an inch across. We have found it hardy, except in the severest winters; in the northern countries it may need slight protection. If sown early, it will bloom the first season, but does not produce much effect until the second or third year.

GAZANIA SPLENDENS.—Though this fine plant is already well-known and largely cultivated. To what extent the plant may come true from seed we have at present no information, but see no reason to doubt of its constancy.

***HUNNEMANNIA FUMARILEFOLIA.**—A fine Mexican Poppywort, which has several times been introduced to this country, but of late years has disappeared from cultivation. To judge from the published figures it must possess great merit as an ornamental plant, its large *Eschscholtzia*-like flowers being of a beautiful sulphur yellow colour, and its glaucous foliage cut into linear segments adds to their effect. It differs from *Eschscholtzia* in the absence of the extinguisher-like calyx which so well characterizes that genus. It is said to blossom the first year, and may therefore, we presume, be treated as an annual, but is a true perennial when protected in winter.

LEPTOSIPHON HYBRIDUS.—Though not an absolute novelty, this pretty little plant met with so little attention last season that we were justified in assuming most of our readers are unacquainted with its merits. We believe it to be a real hybrid between *L. aureus*, and either *L. androsaceus* or *L. densiflorus*. It has completely the habit of the former species, but its flowers are rather larger, and offer in the place of the original yellow a singular variety of tints; several shades of yellow and orange, rose, chamois, flesh-colour, salmon, red and even white occurring in the same patch. It is an abundant bloomer, and being, like the rest of the genus, perfectly hardy, deserves the attention of every amateur of annual plants.

***LOBELIA ERINUS MARMORATA.**—Resembling in habit the *ramosoides* and other varieties of *L. erinus*, this very interesting novelty of French origin, differs from them

all in its flowers, which are of large size, having a white centre, surrounded by pale blue marbling, which passes at the edges of the flower into bright blue. It requires only the treatment of the other varieties, and is applicable to the same purposes.

**MIMULUS ROSEO-PALLIDUS*.—Described as a new half-hardy species, with the habit of *Mimulus cardinalis*, growing about one foot high, and bearing rose-coloured flowers.

PHLOX DRUMMONDI RADOWITZII.—During the past summer we have grown a variety under the above name, which produced rose-coloured blossoms, striped or rather streaked with white, and as all but a few of the plants were thus variegated, we have no doubt it will henceforth prove pretty constant.

**PODOLEPIS AFFINIS*.—This species, received from Melbourne, is described as being the finest of the genus. It is said to have flower-heads three inches across, with an orange disk, and quilled, yellow ray-florets. The seeds are represented to be very large

and quite distinct in their character from those of the other species, which leads us to suppose that the plant may belong to some other genus.

SAUROMATIUM GUTTATUM.—This is a very remarkable plant of the Arum family, having a flattened tuberous root, from which arises, early in spring, a very long, sessile spathe, drooping in its upper half, of an orange colour internally, singularly blotched with crimson brown. The leaves are scarcely less striking than the inflorescence, having a marbled stalk and a many-parted limb, the hinder lobes of which meet so as to produce a wreath-like effect. It is of the easiest culture, and is almost hardy.

**SENECIO ELEGANS NANA CERULEO* (New Dwarf Blue-flowered Jacobæ).—This novelty is sent from Germany with an excellent character, being described as of very dwarf compact habit, with an abundance of flowers of fine blue colour.—*Abridged from the New Catalogue of W. Thompson, Tavern Street, Ipswich.*

GARDEN AND GREENHOUSE WORK FOR FEBRUARY.

ANNUALS of choice kinds to be sown in pans for early bloom, and a pinch of each of the tender annuals, such as asters, cockseeds, balsams, etc., got in, so as to have a few forward, and separately potted in thumbs, by the time the main sowing of these is made next month. The general batch of asters for bedding need not be sown till April; but all annuals that require a long season of growth, or that admit of being deferred in their blooming, in order to gain size and symmetry, should be begun with at once.

AURICULAS sown now will require no bottom-heat, and will be better without it. Place a square of glass over every pan of seed to prevent the need of watering until the plants are up. Top dress and clean up the stock plants, and give them more water as they get into active growth.

ARTICHOKES to be dressed towards the end of the month with a mixture of two parts rotten dung and one part coal-ashes. The latter must be fine and free from cinders.

BEDDING PLANTS.—Hotbeds and propagating cases must be set to work at once, to insure a sufficient supply for the coming season. Repot all the old stools that are to be turned out, such as old Punch, Tom Thumb, and other geraniums. Start geraniums, lobelias, ageratums, heliotropes, tropeolums, salvias, verbenas, etc., to get nice shoots for cut-

tings. Have ready a good supply of nearly dry compost for potting, so that whatever has to be done may be done without delay through change of weather or want of materials.

CAULIFLOWERS sown the first week will soon be ready to prick out into pots for planting out early. If any tendency to damp among those just up, sprinkle wood-ashes or dust of peat over the surface.

CABBAGE.—Early York, Shilling's Queen, and Early Hope may be sown at once on a warm sloping border. Old stumps may be planted close together in any out-of-the-way place to furnish a few sprouts, which will be useful at this season of scarcity.

CUCUMBERS, if strong in pots, to be turned into fruiting beds. Beware of burning by too fierce a heat. Sow again for succession.

CELERY to be sown for the first crop, and the plants when up to be thinned at once, that they may grow strong from the first. See pp. 246, 276, of last year's volume.

DAHLIAS to be started for cuttings, and the cuttings taken when two or three inches long. The great enemy of the newly-struck cuttings is water; therefore, administer it with judgment and caution.

EVERGREENS cut down by the frost

will throw up shoots from the root, but will never form handsome plants again; therefore, it will be best to remove such injured shrubs where they occupy important places, and plant others. The old shoots will furnish cuttings if planted in the reserve ground, and some of them may in time prove useful for ornamental purposes.

FRUIT TREES should be thoroughly cleaned, and all pruning completed speedily. Get ready protecting materials for walls, and put on copings where moveable ones are used. Let all planting be done thoroughly, or not at all; that is, prepare good borders, have efficient drainage, and pay a good price to insure good trees. In many places peach and apricot trees are all but killed by the terrible frosts this season, owing to the unripe character of the wood. Raised, porous, well-drained borders show their value in such a summer as the last, and prove that liberal outlays in the first instance, if made with judgment, are sure to pay in the end.

GREENHOUSE may have an increase of heat to encourage growth. Acacias, camellias, azaleas, and forced shrubs to have plenty of air and plenty of water all the while they are in bloom. *Acacia rotundifolia* is one of the best of plants for amateurs. It is now coming into bloom along the whole lengths of the shoots, a perfect garland of gold.

RHUBARB, in open quarters, to be heavily dressed with manure, which need not be much rotted. We use it quite green, and prefer the longest. The weather and the rains take all rankness out of it long before the plants can suffer, and in the meantime they have the whole of its strength by filtration. Forced rhubarb

to have a good share of daylight, to produce colour and flavour. When blanched, it is only fit for the muck-heap, as it is then neither a vegetable nor a substitute for fruit.

SEA-KALE and **ASPARAGUS**.—See last month's notes.

ROSES.—Where early bloom is wanted out of doors, a portion of the earliest varieties may be pruned at once. After such a winter, they will not break too soon. The general pruning should be deferred till next month. Roses in pots will come into bloom beautifully if placed in a sunny house, in full light, and kept well supplied with water and liquid manure. If any of these are required to bloom late in the autumn, starve them in pots till the middle of June, and then either give a good shift or turn them out and prune smartly.

TOMATOES to be sown in heat. We found Powell's Early Red the best last season, when tomatoes were almost a failure.

STRAWBERRIES to be well manured at once with a heavy top-dressing with dung three parts decayed. The plants will push through it, and flower beautifully, and want little or no watering when hot weather sets in.

VINES in flower to have a rather close air and no syringe. Vines in fruit to be thinned betimes, and once thinned for all, as the less handling the better, and the berries left for a second thinning only absorb nourishment to no purpose.

ORCHIDS to be looked over, and those that want repotting to be attended to. Sphagnum, peat, etc., to be very clean and free from mould; water soft, and of the temperature of the house, and plants to be encouraged after shifting.

TO CORRESPONDENTS.

PSYLLA PYRI.—*Gardener*.—The pear leaves sent had been visited by *Psylla pyri*, the pear chermes, an insect closely resembling the aphid, and, like it, very destructive. It is larger than any aphid, colour crimson, shaded with black. The female insect lays her eggs on the young leaves and blossoms of the pear, sometimes on the newly-formed fruit, and these eggs have exactly the appearance of pollen until examined by means of a lens. After the first change of skin, the larvæ assume the appearance of plant-bugs, and then make their way towards the bearing wood and shoots of last year, where they remain till transformed into winged insects, which are green-bodied, have red eyes and white wings. It changes afterwards about the head and thorax, which become orange-coloured, but the abdomen continues green. The only way of dealing with it as an enemy is to watch for its appearance in spring, by means of the indica-

tions afforded by the presence of the parent insect, and the pollen-like eggs, and then to syringe the trees with tobacco-water. It yields to the same remedies that are applied in visitations of aphides, and should be dealt with on its first appearance, or it will be scarcely possible to escape its ravages.

SIZES OF POTS.—*A. B.*—It is becoming the rule with societies to specify the sizes of pots by their diameters in inches, a far preferable method to the enumeration of "casts," which have different meanings at different potteries. The following are the measurements of pots and casts adopted at the London potteries:—Thumbs, $2\frac{1}{2}$ to 3 inches; 60's, $3\frac{1}{2}$; 48's, 4 to 5; 32's, 6; 24's, $7\frac{1}{2}$; 16's, $8\frac{1}{2}$; 12's, $9\frac{1}{2}$ to 10; 8's, $11\frac{1}{2}$ to 12; 6's, $12\frac{1}{2}$ to 14; 4's, 14 to 16; 2's, 18; 1's, 20. If diameters only are in future recognized, as we hope they will be in exhibition schedules, the number of the casts need not be specified

at all, that becomes a matter of manufacture only.

CYDONIA JAPONICA.—*A. P.*, *Blackford*.—The *Pyrus Japonica*, more correctly known as *Cydonia Japonica*, is increased by layers. It may also be worked on thorn stocks. The layers are put down in September in the usual way, and are allowed to remain till the September following, when they are taken off and planted in nursery rows until strong enough to be removed to the places they are to decorate. It will grow in any good loamy soil or clay, and makes a very beautiful bush or standard. But the best place for it is a dwarf wall.

MUSGRAVE'S SLOW COMBUSTION STOVE.—*Messrs.* Musgrave have shown their anxiety to meet the wants of amateurs by offering their Slow Combustion Stove at £4 10s.; at a less price than that they say it is impossible to produce it of sufficient size to burn all night. The late hard frosts have tried ours severely, and it has not failed to do all, and more than all, that was required of it. We have removed the horizontal chimney, and substituted an upright one, consisting of three lengths of four-inch glazed drain pipe, making a six feet chimney, and by this method we find the stove to be capable of heating a house considerably larger than the one in which we have tested it—large enough, in fact, for a house thirty-five feet in length. We strongly advise those who adopt it to use a direct upright chimney instead of an horizontal one, and to construct a cold air drain to the bottom of the stove, so that the circulation of air through its chambers may suffice to keep the house constantly warmed with fresh air from without.

TAKING AN OLD GARDEN.—*B. H.*—Read the first, second, and third chapters of "Profitable Gardening" in the first volume of the *FLORAL WORLD*. Your long-neglected currant and gooseberry trees must be cut back, but if you cut them all back you will lose the crop this season. Therefore cut back to well placed forks and stout rods every alternate tree all along the wall, and the others trim up and thin away fore- and weak shoots. As those close pruned make new growth this season, train in regularly, and remove by finger and thumb all shoots that break where you do not want them, and you will get bearing wood for next year; and then you can cut back the other half, and after that manage them in your own way. American blight has been dealt with pretty often in these pages. Read the article at page 28 of the first volume of the *FLORAL WORLD*, and you will gain information that will be worth pounds to you. A very simple and effectual way of cleansing apple-trees is to scrub them smartly with a dandy brush dipped in warm brine. You must cover the grass underneath them with mats, or the brine which falls will kill it. Three years ago we treated a lot of old neglected trees that way, and they have been pictures of health and fruitfulness ever since. Small bush trees affected with American blight should be painted with Gishurst half a pound, clay half a pound, water one gallon.

ROSES.—*J. R.*—Twelve shillings a dozen for roses of good sorts, on their own bottoms, is a fair price, and you must not expect to get good plants for less. Yours, varying from a foot high to little bushes, with stems as thick as pencils, are good average plants, such as gardeners call "nice stuff." You did quite right to put them into the house for the winter, and quite wrong to order them at the fall of the year, unless they were for pot culture. The month of April is the best time to turn out roses on their own roots, and you had better keep yours in their pots till then. Though you think you have paid at too high a rate, you will not regret the purchase if you do justice to the plants. The reason why the nurseries prefer

to send out worked plants is, because they can give their customers more to look at for the same money. You will not see such fibres on the roots of worked plants as those which surprised you in your lot; the Manetti makes an abundance of fibres, and hence it gets enough food on poor soils, but briars never did, and never will diffuse their spongioses about profusely, and hence they must be well fed, or the roses on them languish. We would sooner have your plants, at the price you paid, (and we pay four times as much sometimes, and never pay less) than any quantity of the worked plants that are offered at prices that tempt people who have not learnt the difference between price and value. *Ficus elastica* is really a stove plant, but you will often see it in good health where it has no better place all winter than the window of a dwelling-room. Give it a really warm greenhouse and it will do; but a greenhouse not constantly heated is less safe for it than a sitting-room. The *Pyracantha* is the evergreen thorn, *Crataegus pyracantha*, and a charming thing it is, with its splendid bunches of berries all the winter. Not one nursery in a hundred keeps it, why, we were never able to learn; we know that after writing to a dozen different places we had at last to raise it from seed, and practise patience against our will.

PELARGONIUMS NEGLECTED.—*Amateur.*—The plants that were forgotten last season had better be left alone till they begin to grow freely; then cut them into respectable shapes, and a week after cutting repot them, and after that train out the new growth and shift as required. They will bloom late and be useful, but will not be good examples of culture.

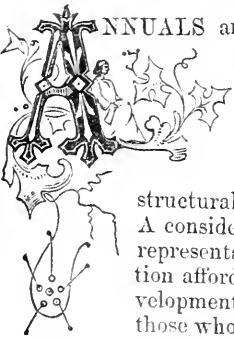
CATALOGUES AND BOOKS RECEIVED.—"William Thompson's Catalogue of Flower Seeds for 1861, Tavern Street, Ipswich." We have frequently commended this for its excellent arrangement, fulness, honesty, and typographical neatness. It merits higher praise than ever this year, for it bears upon every page evidence of having been prepared by a seedsman who proves every novelty before he offers it, and who has no faith in new prices until he has proved them to be good.—"Priced Catalogue of New and Genuine Seeds for 1861, by Messrs. Milne and Co., Camellia Nursery, Wandsworth Road, London, S." A very great improvement on the dandyified blue ink catalogues issued by Messrs. Milne in former years. It contains everything useful, the cultural notes are brief and to the purpose.—"The Chemist and Druggist Monthly Trade Circular, James Firth, 24, Bow Lane, London, E.C." The most perfect model of a trade circular we have yet seen. It is more than a "circular" indeed, for it contains thirty-eight pages of information on the progress of chemistry, and amongst the articles are some of high scientific ability; of which we may instance the papers on Photographic Chemicals, and the Natural Order Ranunculaceae, as admirably done. We advise those of our readers who are in any way interested in chemistry and pharmacy to make acquaintance with this work at once.

RUSTIC ADORNMENTS.—*Precis.*—You are quite mistaken in assuming relationship between "Rustic Adornments for Homes of Taste," and the French work "*Maison Rustique des Dames*." The titles of the four parts, into which the latter work is divided, sufficiently attest that they are wide as the poles asunder. The divisions are—*La Tenue de Ménage; le Manuel de Cuisine; le Traité de Jardinage; l'Hygiène et la Médecine Domestique.* "Rustic Adornments" does not contain a word about housekeeping, cookery, or domestic medicine. Arthur Young's work has been published in French, under the title "*Cultivateur Anglais*," in eighteen volumes.

THE
FLORAL WORLD

AND
GARDEN GUIDE.

MARCH, 1861.



ANNUALS are mostly so fugacious in habit that the real beauty of many of them is under-estimated, and one great use of them almost wholly overlooked. There is no more agreeable or more instructive method of studying botany than by growing annual plants, selecting specimens in bloom and seed to dry for the hortus siccus, and carefully determining their several

structural peculiarities as illustrations of orders and genera.

A considerable number of the most important orders have their representative in annuals, and the opportunity which cultivation affords of watching a plant through all the phases of its development to the final ripening of its seed is far superior for those who desire full and accurate knowledge to all possible col-

lections of wild specimens, no matter how many countries and climates may be laid under tribute. The student of botany will find it slow work to trust alone to books and dried specimens; but, with the assistance of a garden, a border, and an assortment of seeds, he may make progress with extraordinary rapidity, and this class of plants will tell the whole story of their lives and habits in the space of a few months; and, while representing a vast number of orders, tribes, and families, furnish, at the same time, an intelligible key to the geographical distribution of plants. Take the Californian sorts for an example. There is the gaudy *Escholtzia*, representing the family of poppies; the *Clarkia*, *Eucharidium*, and *Godetia*, representing the *Oenotheras*; and the *Gilias*, representing *Polemonium*; *Clintonia*, the *Lobelia* tribe; *Eutoca* and *Nemophila*, the *Hydrophyllum* tribe; *Leptosiphon*, the *Phlox* tribe; *Limnanthes*, the tribe bearing its own name; *Monardella undulata*, the *Labiata* tribe, and others which belong to larger orders of which representatives are more abundant. The cruciform and composite flowers crowd into our lists of annuals; the huge order of *Ranunculaceæ* offers *Delphinium* and *Nigella*; the *Papaveraceæ*, the gaudy poppies, of which the peony-flowered poppy is one of the most beautiful of all our garden flowers. *Platystemon Californicum* comes also into this group, along with *Escholtzia* and *Rœmeria hybrida*, which is pretty, but short-lived. Of the *Fumitories* we have *Corydalis glauca*; of *Cappari-*

daceæ, *Cleome pungens*. Among the Crucifers we have the *Heliophila*, *Iberis*, *Ionopsidium acaule*, an elegant little plant for rockeries; the well-known Virginian stock, and stocks of fifty other kinds. The Resedaceæ is redeemed from obscurity by that old favourite the mignonette; and the student of botany would do well to make sure of specimens of the three British mignonettes—*Reseda luteola*, *lutea*, and *fruticulosa*—for purposes of comparison. The Caryophyllaceæ send their numerous species of *Dianthus*, *Agrostemma*, *Gypsophila*, *Saponaria*, *Silene*, and *Viscaria*, to the annual garden, and it can boast of no more enduring or lasting ornaments. Linaceæ is not rich in species, but the species are rich in themselves, and the order is made memorable for the sake of *Linum grandiflorum rubrum*, one of the most beautiful garden flowers we have. To



grow it you have but to sow it, and LEAVE IT ALONE—that is the conclusion arrived at, after volumes have been written on the subject, and hundreds of useless experiments tried. Malvaceæ offers *Callirhoe pedata*, a charming novelty; the old favourite, *Hibiscus Africanus*, the elegant Chinese hollyhocks, three feet high, of all colours, and the flowers most beautifully formed and disposed. *Malva zebrina* is a coarse thing, and the botanist may do without it, for it is not a species. Tropæolaceæ abounds in annuals, all of which, if worth it, may be made perennial by proper culture and propagation by cuttings, and that is the only way to secure definite characters, for none of the bedding tropæolums are to be depended on as coming true from seed. We have raised seedlings of the Lobbium section for several years past, and at least sixty per cent. were worthless; but of the remaining forty per cent. all were worth keeping, many were true to their parentage, and a few worth naming and distributing. Balsamina-

cæ offers two species, *Balsamina* and *Impatiens*; the *Leguminosæ* has its *Lupines*, and *Orobus Fischeri*; *Onagraceæ*, a huge number of the Californian favourites; *Lithraceæ*, the pretty and useful *Cuphea purpurea*, in addition to the greenhouse perennial bedding kinds. It would be impossible to enumerate the number of species and varieties of the *Composites*, *Campanulas*, *Phloxes*, *Linarias*, and *Labiates*, without making lengthy lists, and then we should have to add a dozen other orders which admit of detailed study in a garden of annuals. These remarks have occurred to us through having received from a correspondent a complaint of the few opportunities afforded to amateurs for the study of botany. He says, after the hours of business in a great town, it is impossible to make frequent journeys to the country to gather specimens for the herbarium. That may be true; still, "where there's a will there's a way." Grimaldi, the clown, when a lad, used to travel to Dartmouth after leaving the theatre at one in the morning, to catch "Dartford Blues," a particular species of two-winged fly, which he required for an entomological cabinet. The best collection of British mosses, perhaps, ever got together, and certainly the first really interesting book on mosses in the English language, was the work of an operative residing in a grimy Lancashire town. But if our friend wishes to obtain knowledge easily and pleasantly, let him make a careful selection of annual flowers, and grow them expressly for botanical purposes. He may have to do with many that present but few features of attraction, but the majority will beautify his garden while they last, and prove that botany is not, after all, so dry a pursuit as some people imagine it to be.

Viewed in the strictly floricultural sense, annuals commend themselves for the rapidity with which, by their aid, an effect may be produced in garden colouring. Added to our numerous old favourites, we have now some improved forms that must have a place in every well-kept garden. The new *Zinnia elegans flore-pleno* is a really superb thing, and may be looked for this season as a leading agent in the bedding system. The flowers are three inches across, the yellow tubular florets are replaced by ligulate florets of the same rich colour as those forming the circumference, so as to form a complete rosette, resembling a closely imbricated dahlia. There is the same variety of colours in this new group as in the old form of single-rayed flowers, and the growth is as free and regular. The pretty *Clintonia pulchella*, exquisite for small beds and marginal lines and ribbons, has produced an improved form, called *Azurea grandiflora*, producing larger flowers than the species, which we believe will prove a favourite both for use in masses and for the decoration of vases in the conservatory. Of the double *Clarkias* we cannot speak commendingly; several are offered as the result of continental culture, but what is gained in additional petals is lost in elegance: just as in *campanulas*, double flowers are never so pleasing to an educated eye as those which have the typical campanulate form. *Lobelia bicolor marmorata* is undoubtedly a valuable acquisition, and may be treated as an annual or perennial, at the will of the cultivator. It is as compact in growth as *Lobelia erinus speciosa* (which, by the way, is now beginning to degenerate, if raised from seed), but differs from it by being of a pale marbled blue towards the centre, where it becomes pure white; the margins of the petals being of an intense blue, the effect of a mass is chaste and refreshing. But the improved asters carry the day, and are a splendid vindication of annual flowers against all that has been

said against them as weedy and ephemeral things. Messrs. E. G. Henderson offer fifteen varieties of distinct colours of this new race, which have a corymbose style of growth altogether different from all other sections of asters. The habit of this new race may be judged by the engraving on the preceding page.

At page 53 of our volume for 1858 will be found a selection of annuals in colours, which may prove useful just now to those who use this class of plants in the way we have frequently recommended, namely, to precede the bedders, and to be removed the moment they begin to show signs of declining in beauty. The most showy bed we had last year was *Iberis Kermesina*, a brilliant purplish crimson candytuft, which produces grand heads of bloom, and continues in fine condition for at least six weeks. Suppose a ribbon of candytufts to be now sown, they will be in bloom by the time that bedders are usually put out, and, while they last, cannot possibly be surpassed for brilliancy. To give the bedders a shift and a few weeks' more growth would allow of them being turned out in full bloom, and if properly done, they would not flag for an hour, and the advantage would be two sets of flowers in succession on the same ground, instead of one, and the avoidance of that probationary term between the putting out of bedders and *waiting* for them to produce an effect.

We have been much interested in the perusal of "The Gardening Book of Annuals," by Mr. W. Thompson, seedsman, of Ipswich.* Mr. Thompson has been an ardent amateur of this class of plants, and has done much towards rooting up the fraudulent system of renaming old varieties and the publication of spurious novelties. In this prettily got-up and well-arranged work, every annual of merit is described in detail, with practical notes on culture, and the special uses to which various kinds may be put. The introductory essays on the general culture of hardy and half-hardy annuals are as simple as plain English can make them, and comprise all that a beginner needs to know, and much that adepts do not know. Mr. Thompson does not forget to vindicate his favourites. He remarks upon the inexpensiveness of annuals, the splendid effects which may be produced by the use of certain kinds in masses, the individual beauty of many, the indispensable excellence of some, the appropriateness of the dwarf and trailing kinds on rockwork, and the comparatively short period required to produce an effect, many of the species flowering in eight or ten weeks from the time of sowing. When we have thus summed up as many of their uses as we can think of, one more thought arises—that these ephemeras of the queendom of Flora strikingly illustrate the profusion with which elegancies have been mingled with the utilities of the world. The oak must grow for a century ere we can use its timber as ribs for a ship, but from the dropping of a seed like a grain of dust, a few weeks' lapse is sufficient to produce "a thing of beauty," which, though short-lived, is, nevertheless, "a joy for ever."

NOTES OF THE MONTH.

EXHIBITIONS.—Messrs. Cutbush and Son announce that their annual exhibition of Hyacinths will take place at their Home Nursery, Highgate, from the 11th to the 23rd of March. On Tuesday, Thursday, and Saturday, the 12th,

* Published by Simpkin, Marshall, and Co., London.

14th, and 16th, ticket-holders only will be admitted. Tickets may be had on application. The large plants of *Rhododendron arboreum* are now in full flower in the conservatory of the Royal Botanic Gardens. The exhibitions to take place at the Crystal Palace, in 1861, are as follows:—Exhibitions of Plants, Flowers, and Fruit, Saturday, May 18; Rose Show, Saturday, July 6; Dahlias, Cut Flowers, and Fruit, Wednesday and Thursday, September 4th and 5th; Chrysanthemum Show, Wednesday and Thursday, November 13th and 14th. The Grand Horticultural Fête, at York, will be celebrated on the 12th and 13th of June.

SELECTION OF PELARGONIUMS SUITABLE FOR THE CHOICEST COLLECTIONS.

FANCIES.

Emperor, upper petals black, edged white, under petals white, mottled purple; Helen Faucit, dense crimson, lilac edge, under petals lilac, mottled crimson; Madame Rougère, crimson purple, light throat and edges; King, upper petals violet crimson, lower petals flesh, mottled crimson; Omar Pacha, bright crimson; Crimson King, crimson purple, lilac centre and edges; Beauty of Slough, bright rosy crimson, margined with white, white centre; Bridesmaid, pale lavender, edged with white; Cloth of Silver, silvery white, with rose blotch, under petals pure white; Celestial, light light rose; Lady Hume Campbell,

bright scarlet crimson, lilac centre; Prima Donna, white centre, upper petals violet purple, margined with white, lower petals pure white, spotted with purple.

SHOW PELARGONIUMS.

Admirable, white, and maroon; Agnes, pink blotched with black; Conqueror, crimson maroon; Emperor, crimson and dark spot; Fair Helen, white, maroon, and crimson; Governor-General, white, rose, orange, and maroon; King of Scarlets, bright scarlet; Lord Raglan, an improved Salamander; Marvellous, maroon and carmine; Review, white, rose, and maroon; Viola, white and lilac; Larkfield Rival, pure white, with pink spot on top petals.

SECOND EARLY AND SUMMER PEAS.

In the trials of garden peas at the Society's garden at Chiswick, under the superintendence of Dr. Hogg, the number of useful kinds of second early marrows and imperials was found to be susceptible of a similar reduction as that made in strictly early kinds. We now continue from last month the list of really desirable varieties for second and succession crops, reminding the reader that these were sown on the same day as the rest, namely, the 19th of February.

ROYAL DWARF (synonymes, White Russian, Poor Man's Prolific, Dwarf Prolific). Growth, three feet, occasionally branching, bearing eighteen pods, sometimes single, but generally in pairs. Pods two and a-half to three inches long, well filled. Pods similar in shape to those of Early Emperor, and containing five or six peas each. Ripe seed white. Bloomed June 12th, slatted July

3rd, gathered July 13th. Habit of plant, fan-like, and a prodigious bearer.

VICTORIA BRANCHING (synonymes, Paul's Early Dwarf, Paul's Prolific). Plant three feet, robust, bears twelve to sixteen pods. Pods same shape as Sangster's No. 1, but nearly twice as large. Foliage dark green. Bloomed June 16th, slatted July 6th, gathered July 16th. An abundant bearer, but does not come into use till superior wrinkled varieties are in season, and "therefore is not required."

DANECROFT PROLIFIC resembles the last. Fit for use July 20; abundant bearer. Not required for the same reason as the last.

MARROWS.

CHAMPION OF PARIS (synonymes, Excelsior, Knight's Excelsior, Stuart's Paradise, Paradise Marrow). A strong grower,

five to six feet; stem generally single, sometimes branched; pods eight to ten, sometimes in pairs, four inches long, nearly three-quarters of an inch wide, well filled with from seven to nine large peas. Bloomed June 11th, slatted June 23rd, gathered July 6th. An abundant cropper, finer and earlier than Early Ringwood, Early Frame, Anvergne, and Shilling's Grotto.

HARRISON'S PERFECTION. Robust plant, three and a-half feet; large dark foliage; pods in pairs averaging sixteen to eighteen on each plant. Bloomed May 29th, slatted June 16th, gathered July 7th. Once esteemed as an early dwarf marrow pea, but now of no value because beaten by superior kinds. It fails altogether when compared with Prizetaker, Fairbeard's Nonpareil, and Advancer. The pods do not fill well, and the peas are thick-skinned.

THURSTON'S RELIANCE. Plant six to seven feet, single stem, bears ten to twelve scimitar shaped pods, each three and a-half to four and a-quarter inches long. Ripe seed white, large, unevenly compressed. Bloomed June 23rd, slatted June 28th, gathered July 10th. A distinct, useful, and prolific pea; pods a fine dark green colour, which is a recommendation when grown for market. Comes in same time as Anvergne and Shilling's Grotto, but is rather more tender in constitution.

QUEEN OF DWARFS. Plant six to nine inches high, foliage dark bluish green, pods elliptical. Bloomed June 15th, slatted June 28th, gathered July 10th. "A worthless variety, and unworthy of cultivation for any purpose whatever."

NOVEMBER PROLIFIC. Not so good as the preceding, and therefore not worth describing.

EGG. An old variety, long known by the name of *Black-eyed Susan*, from the seed having a black hilum, or eye. Plant seven to eight feet, pods about eighteen, peas very large and oval, gathered July 12th. An abundant bearer, but altogether unfit for table.

VICTORIA MARROW (synonymes, Gibbs' Defiance, Waterloo Marrow, Giant Marrow, Wellington, Royal Victoria, Tall Marrow). Plant vigorous, simple stem, six to seven feet. Pods produced near the top, sometimes in pairs, and containing five to seven very large peas. Ripe seed white, uneven, roundish. Bloomed June 18th, slatted June 26th, gathered July 13th. A useful middle early marrow pea.

PRINCESS ROYAL. Plant three feet, strong grower, dark foliage; bearing ten to twelve pods, usually in pairs. The pods are large, but fill badly, and last year had a chilled and starved appearance. Gathered

July 20th. In a warm season it may prove a useful and prolific late marrow.

GREEN MARROWS.

PRIZETAKER (synonymes, Prizetaker Green Marrow, Rising Sun, Leicester Defiance). Plant five feet, vigorous growth; stem sometimes branched; twelve to eighteen pods in pairs, deep bluish-green colour, with a thick and distinct bloom, containing six to seven large peas of a dark bluish green. Ripe seed small, round, and of a mixed white and green colour. Bloomed June 5th, slatted June 20th, gathered July 6th. An abundant bearer—every way an excellent pea.

MATCHLESS MARROW (synonymes, Milford Marrow, Stradset Marrow). Plant five to six feet, robust, simple stem, twelve to sixteen pods, generally in pairs. Pods similar in shape to Early Ringwood, but considerably broader; they contain six to seven very large peas. Ripe seed white and olive mixed, uneven and irregularly shaped. Bloomed June 13th, slatted June 28th, gathered July 15th. A great bearer; pods plump and well filled, and succeeds Early Green Marrow, or Prizetaker, admirably. It is, however, rather tender, and in 1860 showed the effects of a bad season.

GARBUTT'S AMAZON (synonymes, Denger's Early Prolific, Green Marrow). Like Matchless Marrow but considerably inferior; not so prolific, and five or six days later. Not desirable.

SUTTON'S BERKSHIRE HERO. Plant seven feet; produces eight to ten large pods, which contain six to seven very large peas. Bloomed June 25th, slatted July 3rd, gathered July 25th.

PRUSSIAN PEAS.

GROOM'S SUPERB (synonymes, Blue Spanish Dwarf, Blue Fan). "Not worth perpetuating."

WOODFORD MARROW. Plant robust, very dark bluish green blotched foliage; stem three and a-half feet; pods about eleven on a plant; when ready to gather rather flattened, otherwise same shape, but not quite so large, as Victoria Marrow. Ripe seed very dark blue. Bloomed June 14th, slatted June 26th, gathered July 14th. On account of its fine dark green pod, this is an excellent pea to grow for market, but it is one that requires to be very carefully selected when grown for seed, as it has a great tendency to degenerate back to the Blue Prussian, from which it has evidently been raised.

BATT'S WONDER. Plant of sturdy habit, thick stem, two and a-half feet high, large dark green foliage; pods in pairs, twelve

to eighteen on a plant, curved like the Scimitar, and containing nine to eleven good-sized peas. Ripe seed small, dark bluish green, like that of the Woodford Marrow. Bloomed June 16th, slatted June 28th, gathered July 16th. An excellent and productive kind. In 1859 it withstood the drought better than any other variety; in 1860 it suffered from the coldness of the season.

BLUE PRUSSIAN. Plant three feet, not robust; dark green blotched foliage, pods generally in pairs, twelve to sixteen on a plant, and containing about seven closely packed peas. Bloomed June 16th, slatted June 28th, gathered July 10th. An old and popular variety, and much grown for market. More prolific and hardy than any other of the blue peas.

IMPERIALS.

FAIRBEARD'S SURPRISE. Not robust, always a simple stem; foliage bright, but not dark green; pods generally single, eight to ten on a plant, containing seven to eight good-sized peas. Bloomed June 7th, slatted June 20th, gathered July 9th. This and Fairbeard's Champion of England were originally taken from the same pod; the former having a round and the latter a wrinkled seed. It is the earliest of all the round blue peas, and in every way excellent.

HARRISON'S GLORY. Pods fill badly; variety of no merit.

BURBIDGE'S ECLIPSE. Plant dwarf, eighteen inches to two feet; foliage dark green, stem simple, ten to twelve pods, each containing five to six large peas. Ripe seed large, uneven, deep blue colour. Bloomed June 13th, slatted June 25th, gathered July 13th. The dwarfest of all the blue peas, and an excellent bearer.

FLACK'S IMPERIAL (synonymes, Flack's Victory, Flack's Victoria). An improved Bedman's Imperial; requires careful selection to keep it true, from its tendency to degenerate into Blue Prussian. Plant three feet, always branching, robust habit, pods twelve to eighteen on a plant, each pod containing six to eight large peas. Ripe seed large, irregular, oval, dark blue. Bloomed June 17th, slatted June 26th, gathered July 14th.

BANKSIAN MARROW. A scimitar-formed imperial pea, which possesses every good character, but is in no way distinct from others of its class.

BLUE SCIMITAR (synonymes, Blue Sabre, Scimitar). Robust growth, height two and a-half to three feet; dark green blotched foliage. Bears from twelve to eighteen pods, of a dark green colour, much

curved and flattened. Pods generally produced in pairs, and containing nine or ten peas each. Ripe seed irregularly oval, and dark blue. Bloomed June 16th, slatted June 28th, gathered July 16th. Much grown for market, and is one of the best for culture on a large scale, but is apt to degenerate unless great care be taken to keep the stock pure.

WHITE KNIGHT'S.

FAIRBEARD'S NONPAREIL resembles the early frames in habit of growth, stem branching, three and a-half to four feet; twelve to fourteen very full and plump pods, each containing six to eight closely-packed peas. Ripe seed white, small, and wrinkled. Bloomed June 14th, slatted June 25th, gathered July 6th. An early and productive pea, but surpassed in size and earliness by Advancer.

MONSIEUR SOYER. Plant two to two and a-half feet, bearing ten to twelve pods. Foliage deep green, and much blotched. Pods contain four or five perfect peas. Ripe seed white and wrinkled. Bloomed May 29th, slatted June 16th, gathered July 10th. A tender variety, requiring a good soil and warm position. Very productive of pods, and the earliest of all the dwarf white wrinkled peas.

TALL WHITE MAMMOTH (synonymes, Flanagan's Imperial, Nonpareil Marrow, Green's Superb, Ward's Incomparable, Oxford Tom, Cotton's Leviathan, Champion of Scotland). A vigorous grower, six to seven feet high; when planted thinly produces three or four lateral branches, which are almost as long and productive as the main stem. Foliage very much blotched. Pods twelve to twenty-four on a plant, generally in pairs, light green colour, containing seven large peas, which are over half an inch in diameter. Ripe seed white and wrinkled. Bloomed June 19th, slatted June 28th, gathered July 14th. A valuable and productive pea. The plant continues growing, blowing, and podding, and it is not unusual, in mild seasons, to find it supplying an excellent dish as late as Christmas.

MACLEAN'S PROLIFIC. Plant vigorous, two and a-half to three feet, dark green foliage, very much blotched; stem simple, producing nine to twelve pods, which last season were unequally filled. Bloomed June 15th, slatted June 26th, gathered July 15th. This new pea may hereafter prove to be early and productive; at present it cannot be said to have exhibited any very distinct excellences.

ALLIANCE (synonyme, Eugenie) Differs from Climax only in having the ripe seed white. When first introduced was an ac-

quisition, but is now far surpassed by some of Dr. Maclean's seedlings.

BRITISH QUEEN (synonymes, Carter's Victoria, Great Britain, Thorn's Royal Britain, R. Allison's Victoria, Swanley Marrow). A robust grower, six to seven feet high; stem generally single, but sometimes branched when thinly sown. Pods generally single, but sometimes in pairs, thirteen to eighteen on a plant, each containing five to seven peas, some of which are more than half an inch in diameter. Ripe seed white and wrinkled. Bloomed June 20th, slatted June 30th, gathered July 16th. One of the best and most productive of the tall wrinkled marrows. It will sometimes continue blooming and podding till Christmas. The only difference of importance between this and Tall White Mammoth is, that British Queen is two days later.

LYNN'S WRINKLED MARROW. Three feet, simple stem; twelve to fourteen pods; ripe seed white, with a black hilum like the Egg pea. Bloomed June 28th, slatted July 6th, gathered July 22nd. Much grown in the north, is very hardy, but not otherwise desirable.

KNIGHT'S DWARF WHITE. Two and a-half to three feet; stem much branched; foliage deep green, blotched. Pods in pairs, twelve to sixteen on a plant, six to seven peas in each. Ripe seed white and wrinkled. Gathered July 24th.

KNIGHT'S TALL WHITE. A robust grower, six to seven feet; stem branched; productive till late in the season. Foliage dark green and much blotched. Pods in pairs, twelve to eighteen on a plant, seven to eight peas in each. Ripe seed white and wrinkled. Bloomed July 1st, slatted July 9th, gathered July 24th.

GREEN MARROW KNIGHT'S.

NE PLUS ULTRA (synonymes, Jeyes' Conqueror, Payne's Conqueror). Robust growth, seven feet, branching; stem dark green blotched foliage. Pods twelve to eighteen, seven very large peas in each, like those of the Green Marrow. Ripe seed mixed white and olive. Bloomed June 16th, slatted June 26th, gathered July 10th. One of the best in cultivation, an abundant bearer, and as early as Early Green Marrow.

GENERAL WYNDHAM (synonymes, Buckland's General Wyndham). Plant robust, six to seven feet, frequently branched. Foliage dark green, blotched. Pods single and in pairs; ten to fourteen, eight very large peas in each, same colour as Early Green Marrow. Ripe seed white and olive mixed. Bloomed June 23rd, slatted July 2nd, gathered July 20th. A valuable ac-

quisition, more robust and larger pods than Ne Plus Ultra; continues bearing till very late in the season. When cooked, of a fine bright green colour, unlike those of any other variety.

GREEN KNIGHT'S.

ADVANCER. Free robust growth, two feet, dark green and blotched foliage; stem succulent, and sometimes branching; twelve to eighteen pods, generally in pairs, eight large peas in each. Bloomed May 30th, slatted June 8th, gathered July 3rd. Here is a green wrinkled marrow as early as Early Emperor, remarkably productive, and even in such a season as the last well-filled and true to character. Most delicious when cooked. Raised by Dr. Maclean of Colchester.

MIGNON. Very dwarf, fifteen to eighteen inches; dark green blotched foliage. Pods in pairs at every joint, ten to twelve on a plant, six to seven peas in each. Ripe seed green and wrinkled. Bloomed May 28th, slatted June 12th, gathered July 3rd. The pods are small, and soon become too old for use, so that the season of this pea is very short; but it merits attention as a marrow pea that comes into use earlier than Early Emperor, and will probably prove to be the first marrow pea suitable for forcing.

CHAMPION OF ENGLAND. Luxuriant in habit, six to seven feet high, occasionally branched; light green foliage, very slightly blotched. Pods twelve to eighteen on a plant, generally single, seven to nine very large compressed peas in each. Bloomed June 6th, slatted June 23rd, gathered July 10th. A valuable pea, well established in reputation; it originally came from the same pod as Fairbear's Surprise.

HAIR'S DWARF MAMMOTH. Robust habit, succulent stem, two and a-half to three feet. Foliage dark green and blotched. Pods in pairs, twelve to sixteen on a plant, seven large compressed peas in each. Ripe seed green and wrinkled. Bloomed May 28th, slatted June 13th, gathered July 10th. An excellent dwarf green marrow, has a larger pod, and is a fortnight earlier than Dwarf Green Knight's. Very hardy and prolific.

PICUREAN—SEA GREEN. These are two of Dr. Maclean's seedlings, which need to be further tried to determine their respective merits. In 1860 their growth was not satisfactory. We name them here in justice to Dr. Maclean and Mr. Turner.

CLIMAX (synonymes, Fairbear's Excelsior, Napoleon). Robust habit, three to three and a-half feet, unbranched. Foliage light green and blotched. Pods thirteen to nineteen on a plant, generally in pairs,

badly filled. Ripe seed green and wrinkled. Bloomed May 26th, slatted June 13th, gathered July 12th. Once useful for its earliness, may now be dispensed with on account of its filling so badly.

ESSEX RIVAL resembles Advancer, but is ten days later. As a dwarf second early green wrinkled pea, it is an acquisition, and ought to be retained in cultivation. It is one of Dr. Maclean's seedlings.

LORD RAGLAN. Plant robust, three feet, not branching. Foliage dark green and blotched. Pods in pairs, twelve to sixteen on a plant, five to seven peas in each. Ripe seed green and wrinkled. Bloomed June 10th, slatted June 21st, gathered July 12th. Of the same race as Hairs' Dwarf Mammoth, but two or three days later. A useful pea but does not fill over-well.

VEITCH'S PERFECTION. Succulent and robust; stem three feet; foliage dark green, slightly blotched. Pods in pairs, ten to fourteen on a plant, same shape and size as General Wyndham and British Queen, seven to eight large peas in each, which are very closely compressed. Ripe seed

large, green, wrinkled. Bloomed June 13th, slatted June 26th, gathered July 16th. An improved Hairs' Mammoth, which it surpasses, in producing larger pods, but is six to eight days later. The finest pea of its class, and deserving general cultivation.

TALL GREEN MAMMOTH (synonymes, Comp titor, Monarch, Fpp's Monarch, Strathmore Hero, King of Marrows, Waite's King of Marrows). Vigorous growth, six to eight feet, branched. Foliage dark green and blotched. Pods in pairs, twelve to sixteen on a plant. Ripe seed large, green, and wrinkled. Bloomed June 13th, slatted July 1st, gathered July 20th.

KNIGHT'S DWARF GREEN. Free grower, three feet, branching; dark green blotched foliage. Pods in pairs, ten to twelve on a plant, seven good-sized peas in each. Ripe seed green and wrinkled. Bloomed June 22nd, slatted July 2nd, gathered July 28th. The latest of all the varieties; was in full bearing on the 6th of August, when every other sort was ripened off or ripening.

The Varieties of Garden Peas, arranged in the Order in which they come into Use, showing their comparative Earliness.

Dillistone's Early	June 22nd	Sea Green	} July 12th	
Sangster's No. 1	„ 29th	Climax		
Early Emperor	} July 3rd	Lord Raglan	} July 13th	
Danecroft Rival				Royal Dwarf
Tom Thumb				Victoria Marrow
Advancer	} July 5th	Matchless Marrow	} July 14th	
Mignon				Burbridge's Eclipse
Telegraph				Essex Rival
Champion of Paris	} July 6th	Woodford Marrow	} July 15th	
Early Ringwood				Groom's Superb
Prizetaker				Flack's Imperial
Fairbeard's Nonpareil	} July 7th	Banksian Marrow	} July 16th	
Early Frame				Tall White Mammoth
Dickson's Favourite				Maclean's Prolific
Harrison's Perfection	} July 9th	Victoria Branching	} July 20th	
Bishop's Long-podded				Batt's Wonder
Fairbeard's Surprise				Scimitar
Auvergne	} July 10th	Alfiance	} July 22nd	
Thurston's Reliance				British Queen
Shilling's Grotto				Veitch's Perfection
Queen of Dwarfs	} July 11th	Danecroft Prolific	} July 24th	
Early Green Marrow				Princess Royal
Monsieur Soyer				Garbutt's Amazon
Hairs' Dwarf Mammoth	} July 12th	General Wyndham	} July 28th	
Champion of England				Sutton's Berkshire Hero
Ne Plus Ultra				Tall Green Mammoth
November Prolific	} July 12th	Lynn's Wrinkled Marrow	} July 24th	
Egg				Knights Dwarf White
Harrison's Glory				Knights Tall White
Epiqueurean		Knights Dwarf Green		

Synoptical Arrangement of the Varieties of Peas, with the Dates on which they were ready for Gathering.

I. FRAMES.		V. IMPERIALS.	
Dillistone's Early	June 22nd	Fairbeard's Surprise	July 9th
Sangster's No. 1	" 29th	Harrison's Glory	" 12th
Early Emperor	July 3rd	Burbidge's Eclipse	" 13th
Danecroft Rival	" 3rd	Flack's Imperial	" 14th
Tom Thumb	" 3rd	Bank-ian Marrow	" 14th
Telegraph	" 5th	Scimitar	" 16th
Early Ringwood	" 6th		
Early Frame	" 7th	VI. WHITE KNIGHT'S.	
Dickson's Favourite	" 7th	Fairbeard's Nonpareil	July 6th
Bishop's Long-podded	" 9th	Monsieur Soyer	" 10th
Anvergne	" 10th	Tall White Mammoth	" 14th
Shilling's Grotto	" 10th	Maclean's Prolific	" 15th
Royal Dwarf	" 13th	Alliance	" 16th
Victoria Branching	" 16th	British Queen	" 16th
II. MARROWS.		Lynn's Wrinkled Marrow	" 22nd
Champion of Paris	July 5th	Knight's Dwarf White	" 24th
Harrison's Perfection	" 7th	Knight's Tall White	" 24th
Thurston's Reliance	" 10th	VII. GREEN MARROW KNIGHT'S.	
Queen of Dwarfs	" 10th	Ne Plus Ultra	July 10th
November Prolific	" 11th	General Wyndham	" 20th
Eggs	" 12th	VIII. GREEN KNIGHT'S.	
Victoria Marrow	" 13th	Advancer	July 3rd
Danecroft Prolific	" 20th	Mignon	" 3rd
Princess Royal	" 20th	Champion of England	" 10th
III. GREEN MARROWS.		Hairs' Dwarf Mammoth	" 10th
Prizetaker	July 6th	Epicurean	" 12th
Early Green Marrow	" 10th	Sea Green	" 12th
Matchless Marrow	" 13th	Lord Raglan	" 12th
Garbutt's Amazon	" 20th	Climax	" 13th
Sutton's Berkshire Hero	" 25th	Essex Rival	" 13th
IV. PRUSSIAN'S.		Veitch's Perfection	" 16th
Groom's Superb	July 14th	Tall Green Mammoth	" 20th
Woodford Marrow	" 14th	Knight's Dwarf Green	" 28th
Batt's Wonder	" 16th		
Blue Prussian	" 16th		

OLD AND NEW ANNUALS.

GROWN FOR TRIAL AT CHISWICK, 1860.

THE Report of the Floral Committee, drawn up by Thomas Moore, F.L.S., occupies nineteen pages of the Horticultural Society's Journal. But a considerable portion of the details have no interest whatever for our readers. It will be remembered that we submitted a carefully prepared report on annuals grown for trial at Stoke Newington in the GARDEN ORACLE of 1860, and we should have added to that in the issue for 1861, had it not happened that the ungenial weather of the last season prevented us arriving at definite conclusions on the kinds we had taken in hand for comparison. For this same reason the report from Chiswick

is not to be considered final; and Mr. Moore distinctly states as much in his introductory remarks, and he adds what is also true, that "some [annual flowers] may even have preferred the moisture and comparative coolness which were prevalent." But the number of these would of necessity be few, because the majority of garden annuals come from climates much warmer than that of Britain. In considering this report, we shall omit all such particulars as have been submitted to our readers on former occasions, as the result of our own experiences, for mere repetitions can have no value, no matter on whose authority

they may be given. We add the names of the seedsmen by whom the sorts were contributed, as they are in some respects responsible for the characters of the plants.

ACROCLINIUM ROSEUM (Van Houtte), Swan River.—Everlasting, raised in heat, and planted out, flowered early and lasted long. Our readers know all about its excellences as a border flower.

AGERATUM MEXICANUM NANUM (Thompson).—A good dwarf variety, branched habit, leaves almost deltoid, flowers in large heads, grayish blue.

AGERATUM ALBUM AND ROSEUM (Carter).—Pronounced worthless.

ALONSOA WARSZEWICZII COMPACTA (Turner).—A pretty border plant, dwarfier than the ordinary form, and may be treated as a suffrutescent greenhouse perennial. Small ovate-toothed leaves, clear scarlet flowers, habit erect, plant two feet in height.

AMBLYOLEPIS SETIGERA (Thompson).—A weedy plant, with poor yellow flower.

ANAGALLIS GRANDIFLORA NAPOLEON III. and **A. G. Eugenie** (Van Houtte).—Fine large flowers, various in colour, including purplish red, orange and blush white. These belong to a large-flowered race obtained from *A. mondiai*, and, like it, are half hardy annuals.

ANTIRRHINUM MAJUS BRILLIANT (Benary).—White tube, crimson upper lip, yellow palate, very showy and attractive.

ANTIRRHINUM M. JUS STRIATUM (Carter).—Some beautifully striped, others self, variously coloured, and among them some very high class flowers.

ARGEMONE HUNNEMANNI AND A. PLATYCERAS (Carter).—The first yellow, the second white. Both of no interest.

BROWALLIA CZERWIAKOWSKI (Van Houtte, Carter).—Proved to be identical with *B. elata*, an old-fashioned annual, with blue, numerous, and showy flowers.

CALLIOPSIS BICOLOR NANA (Carter); **C. BICOLOR SPECIOSA** (Carter); **C. BICOLOR TUBULOSA** (Turner).—The first is a compact bush, fifteen inches high, character not fixed; the second, dark crimson flowers, rich and effective; the third, yellow and crimson, and not very showy.

CALLISTEPHUS CHINENSIS.—This is the well known China aster, now greatly improved. A very large collection was grown; the best classes of them were as follows:—*Dwarf French*, four to six inches high, large flat double flower heads, arranged so that the central head and from five to seven laterals form a flat-topped bouquet. Some very handsome, and the group well adapted for pot-culture; the best of these were *Rose* (Fraser), light rose or pink; *Carmine* and white (Carter), light

rose, white centre; *Lilac* (Fraser), light blue purple; *Dark blue* (Carter), dark purple. *Pompones*, these grew one foot high, moderately branched, close ranunculus-like flower heads, full and compact, and the flowers of an even convex outline. The best were—*Indigo* (Henderson), very deep purple; *Rose foncé* (Henderson), deep rose; *Pompon blanc* (Henderson), pure white; *Rouge foncé* (Vilmorin), rose. *Large Flowered French* of ordinary stature, moderately branched, flower heads of large size, flat faced flowers. The best were—*Rose carne* (Henderson), flesh or pale rose; *Lilas* (Henderson), bluish lilac; *Rose liseré blanc* (Vilmorin), light rose, white striped centre; *Snow white* (Veitch), pure white.

CHRYSANTHEMUM CARINATUM (Carter).—This old-fashioned showy annual was grown for comparison with some handsome modern varieties enumerated below. It is a fine plant for large borders and fronts of shrubberies; bipinnatifid leaves, ray florets white, marked with yellow at the base, disk dark brown. *C. carinatum flavum*, and *C. yellow tricolor*, are the same, except that the ray florets are entirely yellow.

CHRYSANTHEMUM CARINATUM BURRIDGEANUM, synonyme *C. tricolor Burrigeanum* (Vilmorin, Carter).—Wanting in fixity of character, but a handsome variety. When perfect, ray florets, white with zone of yellow round the dark-coloured disk; next to this, on the outer side, a zone of purplish crimson, forming a second circle exterior to the yellow. Deserving of every effort to render it permanent.

CHRYSANTHEMUM CARINATUM VENUSTUM, synonymes *C. tricolor venustum*, *C. tricolor beautiful* (Thompson, Carter).—Very sportive and uncertain; when true, a very pleasing character. Ray florets yellow at the base, forming a ring round the disk, and in the best forms rosy purple in the upper part, or whitish, more or less stained with rosy purple. If the deeper coloured forms could be perpetuated and fixed, this would form a showy border flower.

CHRYSANTHEMUM CORONARIUM ALBOPLENUM (Carter).—In some the florets were wholly yellow; in others, yellow below, and creamy white at the tips.

CHRYSANTHEMUM CORONARIUM ALBOPLENUM.—Free flowering, strong growing annuals. This differs from the preceding, in being quilled; the former is flatter in the florets than this. Tall-growing plants, densely branched, smaller flower heads than the kinds enumerated above, one and a-half inches in diameter. Florets yellow at the base, creamy white at the tips, and

multiplied so as to form a semi-double flower; the disk deep orange.

CLARKIA PULCHELLA INTEGRIPETALA (Turner, Vilmorin).—When true, a fine showy plant, but at present not quite fixed in character; height, one and a-half feet; flowers rosy purple, but the petals without indentations on the outer margin, and clouded at the base.

CLARKIA PULCHELLA MARGINATA (Turner).—Plants deeply three lobed, rosy purple at the base; lobes more or less deeply tipped with white. Individually pretty, but ineffective in a mass. Of little use for general cultivation.

CLARKIA PULCHELLA PULCHERRIMA (Turner, Thomson).—Similar to the species in habit and foliage, but the flowers larger, and of a fine bright crimson tinted rose. Has a fine appearance in a mass, and is a great advance on the common form of *Clarkia pulchella*.

COLLISSIA BARTSLEFOLIA ALBA (Parker & Co.).—A dwarf-growing white flowering annual, six to eight inches high, leaves ovate oblong, flowers numerous; useful for front lines of ribbons.

COLLISSIA BICOLOR ALBA (Parker, Carter).—Altogether inferior to *C. bicolor candidissima*.

COLLISSIA BICOLOR ATRORUBEUS (Carter).—No improvement on the species.

COLLISSIA BICOLOR CANDIDISSIMA (Parker, Turner).—A first-class white annual, showy, and of good habit, one foot high, sparingly pubescent, leaves ovate-lanceolate, flowers large, and pure white.

COLLISSIA MULTICOLOR MARMORATA (Turner, Carter).—Inferior to *C. multicolor*.

COSMIDIUM BURRIDGEANUM (Turner).—A handsome coreopsis-like plant, two feet high, branched, leaves pinnatisected, with subulate leaflets. Flowers on long stalks, deep orange yellow, with dark maroon spot at the base of the florets, which are broader than in *calliopsis bicolor*.

DELPHINIUM CONSOLIDA TRICOLOR ELEGANS (Carter).—A tall form of branching larkspur, producing single and double

flowers of richly varied colours, many elegantly striped.

DIANTHUS ATRORUBEUS (Carter).—A brilliant male pink, having dark stems, with broad leaves at the base, and terminating in an open branched head of flowers, each one and a-half inches in diameter, produced continuously throughout the summer. Colour vivid crimson of many shades. A beautiful border flower.

DIANTHUS CHINENSIS HEDDEWIGH (Carter).—Of this beautiful Indian pink we need only add to what has already appeared in these pages, that the Committee advise the perpetuation of the variety only from the best formed and most richly-coloured flowers. It is impossible to do without this most valuable of all the recent acquisitions.

DIANTHUS CHINENSIS LACINIATUS (Carter).—Not permanently distinct from the last named, but generally taller and more slender in habit, flowers more deeply jagged at the edge, more varied in colour, but generally inferior to *Heddewigii*.

DIANTHUS CHINENSIS IMPERIALIS (Carter, Turner).—A handsome form of Indian pink, flowers large, mostly double, beautifully variegated, colours chiefly rose and rosy purple.

DIANTHUS HYBRIDUS CORYMBOSUS (Van Houtte) and **HYBRIDUS LAXTONI** (Carter).—Neither of these are very attractive; the second of them was raised by our friend Mr. Laxton, of Stamford.

ERYSIMUM ARKANSANUM (Carter, Thompson).—Vigorous and showy, two feet and upwards, sparingly branched, erect, sinuately-toothed leaves, fine bright smooth petalled yellow fragrant flowers, as large as those of the common wallflower. A first-class bright yellow annual.

FENZLIA DIANTHIFLORA (Carter).—A beautiful dwarf annual, which we strongly recommended for pot-culture when it was first sent out. Forms a patch two or three inches across, flowers light rose, Gilia-like, with dark spot in the throat—a charming little gem.

(To be continued.)

CROPPING THE KITCHEN GARDEN.

A few practical remarks on cropping ground with vegetables may be acceptable just now to amateur readers who wish to make the best of their small gardens. My intention is to give a few practical hints as to the best method of cropping the kitchen garden to get the best return of crops.

I will first begin with a south border, if

the reader should have one, for the first sowing of early peas, dwarf growing varieties, such as *Early Frame* or *Sangster's No 1*, or any other early sorts as the grower may fancy. It is best to sow the rows across the border, in a slanting direction towards the east. If the peas are thus sown, six feet apart from row to row, there will be found

room enough to plant two rows of cabbage plants between the peas, at two feet from row to row. Cauliflowers will also do planted one row between the peas, as the cauliflowers will take more room than cabbage. Early spinach will do well sown in drills, between the rows of peas at two feet apart, in the same way as the cabbage plants are planted. The peas being six feet apart, you will obtain at least double the crop you do in the usual old method of sowing peas, about three or four feet apart. They cannot get light and air enough; the consequence is, that very few peas are obtained in the middle of the crop, the principal part of them being on the ends of the rows, and the out-sides. If the peas are sown six feet apart, you will obtain at least double the crop you do in the usual method of sowing them. Another greater advantage of cropping the ground in this manner is, that a greater quantity of crops are produced. The cabbage, cauliflowers, or spinach, whichever may be that are planted between the peas, will be cut and cleared off before the peas are ready. On this ground may be planted celery; and when the peas are cleared off, there will be a space of six feet between the celery, which may be planted with endive, lettuce, or coleworts, or any other vegetable that will be ready soon enough to earth up the celery. If this system be adopted, by giving the plants more room, and sowing other kinds of vegetables between that do not require so much time or room, that, by so doing, we shall obtain a considerably larger amount of matter, and in a much higher state of perfection.

I must now say a word upon cropping the quarters of the garden, as we so often see the tall kinds of peas, such as Knight's Tall, Marrows, Rollison's Victoria, Defiance, and others of similar growth, sown about four feet six, from row to row. Sown in this way, they get grown one row into the other above their stakes. There is also great difficulty in getting between the rows to gather what few pods there are grown between the rows, the principal part of them being on the ends of the rows and the outsides.

Experience has taught me to sow those tall kinds of peas twelve feet apart from row to row; that will leave between the rows of peas room enough for five rows of potatoes at two feet apart. Between each other row of potatoes a row of Cape brocoli may be planted with advantage, the potatoes being planted two feet from the peas on each side; that will leave a space of six feet when the potatoes and peas are cleared away. This ground will do for

turnips or late celery, lettuce or winter onions, and many other kinds of vegetables that may be required. When the brocoli comes off, that will make a space of about six feet; this may be thrown up into ridges until wanted. This method of cropping will be found far before the old method of sowing peas so close as four feet six, as there is four feet six of ground unoccupied until the whole of the crop of peas is cleared. There is two-thirds or more of produce by sowing at greater distance, and a considerable greater quantity of plants on the same space of ground. Brussels sprouts, savoys, and brocoli may be planted between rows of potatoes, planting them after the potatoes are earthed up, between each other row of them. If the potatoes were planted about two feet apart, the brocoli, etc., will be four feet. As the potatoes grow, they may be gently laid together to keep them from the plants. When the potatoes are up and cleared off, there will be four feet between the plants, which may be planted with coleworts or spring cabbage. When the brocoli are cleared off, Mazagon beans may be sown between the cabbage. In the place of the brocoli, dwarf French beans may be sown. If Mazagon beans or Windsor beans are not required, the dwarf French beans will do equally well. Each time the land is cleared of its various crops, it will require a good manuring, and well trenched. If celery is changed to different parts of the garden, it will cause, by digging the trenches, the ground to be well moved. When the celery is cleared off, the same ground will do for the peas the season following, and will be midway between the ground they grew on the preceding year. Exactly the same for the celery. If scarlet-runner beans are sown twelve feet from row to row, ridge cucumbers do well between the rows. If the ridges are thrown out in the middle of the rows of runners, the cucumbers will bear abundantly. The cucumbers by being sheltered by them will do far better than if planted in the open garden.

Vegetable marrows will do exceedingly well if ridge cucumbers are not required. I have grown ridge cucumbers and vegetable marrows this way for years, and have never failed to get a good supply of both. This last season was bad for ridge cucumbers, but I had a fair supply of the ridge cucumbers grown in the way described. When the cucumbers or vegetable marrows are cleared off, this ground will be found useful for cauliflowers under hand glasses: if not wanted for cauliflowers, throw out the manure, well mix it with the soil. It will make a good bed for Early Horn carrots,

us most families require early carrots. Make two or three sowings, as a small compartment of ground will be sufficient. At each sowing, choose a dry mild day to sow the seed, and let it be raked in as soon as sown. If you have no frame, or none at liberty, the bed may be arched over with hoops, and covered with mats occasionally.

When the plants come up, let them enjoy the free air in mild weather, and cover them with mats in cold nights whilst young; and when an inch or two high, thin them to about three inches asunder.

J. HOWLETT.

Abbey Gardens, Ramsey.

TWICE BLOOMING OF HARDY SHRUBS.

ALL plants, of whatever climate they are natives, have a season of rest and a season of growth; in the former they are almost dormant; in the latter they increase in bulk, and exhibit their flowers and fruit, after which they return again to a state of repose. Intertropical plants are seasoned, not from the alternations of cold and heat, but from the alternating dry and rainy seasons. By the latter they are excited into renewed growth, develop their flowers, and set their fruit to be matured in the dry season. Extra-tropical plants are chiefly affected by summer and winter. Annuals, biennials, and perennials are all excited into a floriferous habit, by the gradually returning warmth of spring and the solar light of summer; and when the seed or fruit is ripe, the energy of the plant declines, and it again, in the case of annuals and biennials, ceases to live; or, if perennial, sinks to its winter's rest. Eubous-stemmed plants, which are generally inert during summer, and at that season generally in the drawers or boxes of the florist may be planted at any time in the autumn, winter, or spring, as best suits the purposes of the florist as to the time of their blooming; but plants which are constantly in the ground, and which are affected only by the seasons, present their leaves and flowers as the season prompts. They may be expedited by protection against the depressing effects of cold; and they may be checked by art in a way which remains to be discussed. If a plant be checked in its first career of growth, especially in developing its reproductive members, it immediately concentrates its vital powers, and makes a second attempt, and if the summer allows even a third, to complete the usual effort of its growth. Consequently, if the season of florescence is wished to be prolonged, we have only to destroy the first buds, or shoots, and, of course, a second set will be produced, and flower a month or two later than the usual period. Suppose we wish to have a second or a continuous bloom of roses, certain healthy plants should be fixed on; they, at the winter pruning,

along with the general collection, should be pruned, but somewhat differently; instead of being spurred in closely, which is the usual practice, the shoots of the selected trees should be left somewhat longer; and on these the uppermost bud will be first unfolded, and will shoot out with a flower or two on its apex; but this flowering must be prevented, for as soon as the young shoot from the uppermost bud is one inch in length, the old shoot must be again pruned down to the next bud below, which will develop in its turn, and produce what may be called a second crop of roses.

A similar result is produced in another way; that is, by removing the trees rather late at the beginning of the growing season, which retards the bloom for a week or a month, according to the length of time the tree is allowed to re-establish itself. To this may be added the practice of layering and stopping the strongest shoots during the summer, which will often bring a late bloom in the autumn. And besides all these expedients, a selection of the early, late, and ever-flowering sorts will produce a bloom of roses throughout the summer and autumn.

But it is not the rose only which may be made a flower out of season. The rose acacia, one of the most beautiful shrubs both in flower and foliage, may be made to bloom twice in the season by pruning. As soon as the first flowers begin to fade, let the shoot that bare them be cut back to within an inch or two of its base; thence young shoots will be produced, bearing a second show of flowers in October, sooner or later. The laburnum, and indeed all the cystisus tribe, may be made to flower twice, by pruning back their young shoots which have already flowered. And there is another ornamental shrub which will readily flower in the autumn, either by a late removal in the spring, or by pruning back in April or May. We mean the *Althea frutescens*, which is a rare and pleasing sight in the fall of the year, when flowers are rather scarce. There are, doubtless, several other flowering shrubs which by art may

be made more floriferous than they naturally are; and even many of our most showy herbaceous flowers, as is well known, and may be expedited in flowering by early sowing and protection; and many by pruning or cutting back may have their flowering and beauty prolonged. Even mignonette, candytuft, and other similar border flowers are rendered longer attractive by timely cutting in. The above are only a few of the expedients to which the flower-gardener who aims at making the finest display on his beds and borders at all

times may have recourse. And as it often happens that the owners of the best kept flower-gardens only see them occasionally, or at certain times in the year, the manager should study to have the finest show of flowers he can at the time of the owner's visits. An excellent flower-gardener of our acquaintance cuts off almost all his finest border-flowers a month or six weeks before he expects the family to arrive, in order that a second bloom may come forth when most required.

CYANOPHYLLUM MAGNIFICUM.

THIS is, without a doubt, one of the finest plants in cultivation, the most glorious specimen among late importations, and a plant destined to play a conspicuous part in the exhibitions of the coming season. On these grounds we believe a few words upon its cultivation will be acceptable to our readers. It is a native of New Caledonia, and was introduced by M. Linden, the Director of the Botanic and Zoological Gardens of Brussels, to whose energy and perseverance we are indebted for so many fine plants. *Cyanophyllum* belongs to the natural order Melastomaceæ, which also presents us with the beautiful *Medinella*, *Centradenia*, *Sonerila*, and other fine genera. The leaves are opposite, each pair being placed at right angles to that next below it. They are ovate-lanceolate in form, and of immense size; some have even attained the length of three feet, and ten inches or a foot in width. They are crimson on the under side and dark green, with conspicuous light veins on the upper. They droop gracefully, a short stout foot-stalk enabling them to stand out clear of the stem, and they overlap each other in a most beautiful manner.

Those of our readers who have young plants should start them into growth at once, by plunging them in the tan-bed of a stove or pine pit. As soon as the pot is full of roots, give it a liberal shift, using soil composed principally of good fibrous lumps of peat, a little leaf-mould and loam, and a plentiful admixture of sharp sand. As far as possible keep the upper side of the foliage dry, though the plant may be benefited by occasionally damping the under side of the leaves, but it should be administered as lightly as dew. If the atmosphere of the house be kept constantly moist, this will be seldom required. Should the plant attempt to make laterals, these should be at once picked out, as the beauty of the plant is never seen to such advantage as

when grown on a single stem; and, moreover, this will throw the whole energy of the plant into the leaves which remain, and cause them to become much larger. Shift the plant as often as the pot becomes full of roots; never allow it, from the want of this, or from becoming dry, to receive a check, or the foliage will be certain to record it. Be careful also to shade in summer; if the leaves be exposed to direct sunshine, they soon lose that silky gloss which is half their charm, and they soon turn brown at the point and edges. Most likely it will be found advisable not to grow the same plant more than two seasons; we had better, therefore, say a few words upon its propagation. We have often struck the leaves without any bud at the bottom; but although they have filled the pots with roots, yet we never induced them to throw up a shoot; they lived for a time, but then gradually withered and died. The best way is to cut the stem of the preceding year into single joints, and put each singly into a little pot, plunge in a good strong hot-bed, and cover with a hand-glass. This operation should be done as quickly as possible; for as the leaves are large and very thin, they easily flag or droop. They should be supported, too, by a couple of little sticks. If these do not succeed, you will have still a chance, and a much better one, with the little shoots which will be produced by the original plant. These should be taken off when about two inches long, and, like the others, placed by the side of the smallest pot, and in *very sandy* peat soil.

Cyanophyllum magnificum was sent out in 1859; last year it was followed by another species, *C. Assamicum*, which is a smaller plant, and by no means equal to the other in beauty. We have never yet heard of the flowering of the *C. magnificum*. Probably the flower would not correspond in size with the foliage.

CULTURE OF THE NEAPOLITAN VIOLET.

The Neapolitan Violet is a universal favourite, but a difficulty is sometimes complained of in its cultivation. The subjoined is my manner of treating it.

In May, after the flowering season is over, I sift some light soil over the plants, to the depth of two inches: by this means the runners very readily take root. I take care to keep as much of the foliage of the plant above the surface as possible. In this situation they remain exposed to the weather about six weeks, when I take up the old plants, from which a sufficient quantity of the best rooted runners are selected to make my flowering plants for the ensuing season. I then choose some shady situation, and find they will do better under the shade of trees, freely exposed on all sides to the air, than on a north border under a wall. I mark out the bed, and remove the soil four inches deep, filling it up to the original level with decayed leaves, over which I put the soil previously taken out. The runners are then planted in rows, seven inches distant, and four inches apart

in the rows, and a good watering given them; which will require to be freely supplied during the summer, otherwise the bed, being a little elevated, will soon become dry. Let them remain in this situation until the middle of September, by which time they will have become strong plants. You can then take them up with good balls without any difficulty, as they will then be well rooted in the leaf-mould. Plant them in a frame, in rows nine inches apart, and six inches in the row, and two inches from the glass. Then well water them, and keep the lights on, and shade if the sun shines out, for about a week; by which time the plants will begin to root again, when they may be freely exposed to the air. By this method I have a profusion of very fine bloom, from October until May. All the attention they require in the winter is protection from severe frost, all the air possible being given them in fine weather. The compost to use in the frame is—two parts turfy loam, one part leaf-mould.

J. GREEN.

GARDEN AND GREENHOUSE WORK FOR MARCH.

APRICOTS to be disbudded as required, which is far preferable to the use of the knife hereafter, and prevents the waste of strength in the production of wood where not wanted.

ASPARAGUS in the open ground to have a liberal spring dressing, if not done last month. The manure laid on last autumn to be broken up with the soil, and all the rakings drawn into the alleys, where lettuces may be grown all the summer.

BEDDING PLANTS to be pushed on to secure stock. Geraniums, verbenas, petunias, and calceolarias should be first attended to. Perilla nankinensis, and purple orach sow in pans without heat. Lobelias from seed will require a gentle bottom heat. Cuphea strigilosa is a capital bedder for front lines; height twelve inches; colour yellow and red. None of the herbaceous silvery plants need be put in heat, such as cerastium, golden balm, santolina, Stachys lanata, variegated arabis, etc.

CALCEOLARIAS from autumn cuttings to have a shift, and to be put low in the pots, so as to bring their lowest branches close to the rim; this will cause them to throw out roots from the stem, and become more sturdy, which will be still further pro-

moted by topping them in time. Any that show signs of being about to flower, to be stopped and shifted to prevent it. The joints containing blooms are longer than those of leaf growth.

CHRYSANTHEMUMS to be sorted over, and the sorts intended for bedding and planting out in groups to be propagated, and as soon as large enough to be put out in four-foot beds. Those for exhibition to be carefully attended to as to shifting, stopping, etc., and if possible give them plenty of room in frames, placing the pots containing the plants on empty pots turned upside down. This will insure them plenty of air when the lights are off, and keep them near the glass, and away from insects.

CUCUMBERS will require as much air as can be given them, and it will be as well to tack two or three thicknesses of wool netting over the ventilators to break the force of cold currents, unless the ventilation passes first over hot pipes, which is the best mode. Line beds that are declining in heat, as loss of heat may cause the fruit to drop, and the plants to become spotted.

CAULIFLOWERS to have plenty of water, and be got into brisk growth, or they may begin to button. Plant out from the seed-pans, keep those newly planted out closely.

earthed up, and protect with a little litter or spare mats if the weather is severe.

FUCHSIAS are often propagated at this season from stout cuttings of old plants. These soon root in wet sand, with bottom-heat, but never make such good plants as those from stubby side shoots of the season taken off with a heel. Trim up the standards and pyramids, as they will be in free growth now. They like a moist warm atmosphere, and frequent syringing.

GRAFTING is generally commenced too soon. We are satisfied, from frequent observation, that the end of March is a better season than the beginning. The sap then flows more freely, and there is a brisk root action of the stocks, which induces the grafts to take more readily; and the quicker the take, the better is the junction. Get all ready, even to the writing of tallies, and attaching them to stocks, as they are intended to be worked, so that when you begin you may finish all off quick, instead of having the materials about for days together. Clay well worked with fresh horse droppings, the latter in the proportion of one-third to the former, with a little finely chopped straw added, is the best dressing, and the easiest prepared.

HARDY HERBACEOUS PLANTS should now be divided and planted. Chop over a spadeful of rotten dung in every hole, except for alpine kinds of small growth, which prefer leaf-mould. The *Rudbeckias*, *Enotheras*, *Corydalis capnoides*, *Alyssum saxatile*, *Achillea tomentosa*, *Lychnis Haageana* (now to be had generally in the trade), common white and purple *phlox*, *Solidago*, *Solomon's seal*, hardy *asters*, *Iberis sempervirens*, are most essential elements of a gay border.

Sow successional breadths of all the leading vegetables—peas, beans, cabbages, lettuce, onion, etc. It is neither too late nor too early now for anything.

POTATOES.—Plant the main crop at once. To have them free of disease, choose early sorts; warm dry ground; plant whole sets of moderate size, and pay a good price, to make sure of having them true. On cold, wet, undrained land, potatoes should not be grown at all.

PANSIES.—*Trentham Blue* and *Maggie* should be in the possession of every amateur for use as bedders. The first makes a beautiful circle of blue in front of Flower of the Day. It is also a good first or second line in a ribbon. Show pansies struck now from plump side shoots will make beautiful plants for blooming at midsummer. Keep them cool and shaded, with plenty of water and liquid manure.

SALAD PLANTS.—The *Golden cress* is the best salad plant we have for those who like simplicity in such things. It is excellent for the breakfast table, and far superior to water-cresses. *Normandy cress* and *Extra Curled cress* are also excellent. The crowns of horse-radish planted in a frame over warm dung, and earthed over six inches, will supply a delicately blanched salad that will be esteemed. Treat dandelion roots the same way, but use sea-kale pots to blanch with instead of moulding up.

VINES in flower to be kept rather dry, and all orchard trees the same during their blooming. Keep a sharp look out for vermin. Thin the fruit in good time, give plenty of air, and encourage a firm growth rather than a profusion of weak spray.

POT-CULTURE OF CONIFEROUS TREES.

THE general rule in ordering coniferous trees is, "once and a-done with it;" but that is not a good rule. It is true that there are certain conifers that, when once planted, become lords of the soil, and prohibit further planting by swallowing up the room. Many a mistake occurs, too, in this planting of young trees, as may be proved by reference to many places where yews, cedars of Lebanon, and spruces have shot up close to the walls of a mansion, have become large trees where there was only room for bushes, so that a sepulchral darkness reigns over the household, and there is no alternative but to bear with it, or apply the axe. But, apart altogether from the necessity of planting trees, so that

when of mature growth they shall give unalloyed pleasure, and subserve some legitimate uses, there is another necessity for a more luxuriant style of winter decoration, and this is the proper time of year to think, and determine, and prepare for the future. We were talking about conifers last month. Now, to use these in the way I use them, the first step—that is, the obtaining of the plants—should be taken now, because now the trees lift well. If potted at once, they will be well furnished with fresh roots by July next, and may then have a shift into the pots they are to occupy all the winter. There is no class of winter decorations better suited to this sort of work than conifers. An amateur fond of collecting species

may increase the size of his garden a hundred times in regard to the culture of conifers by adopting my method. Where there may not be room for a single spruce, or fir, or pine, as a tree, a collection of fifty or a hundred, or more or less, of conifers as bushes in pots, may be got together, and the gratification they will afford will be far more than an equivalent for the small expense which their purchase will occasion. I am just now rejoicing in the beautiful appearance of my *Jardinet*. I lost the time for planting bulbs in the autumn through sheer pressure of engagements. There was so much to do in the way of earthwork, owing to the disturbance occasioned here by the works for the main drainage, with which I connected the drains of the house rather against my will, that I could not even prepare for Christmas, according to custom, by making a display of shrubs *à la promenade*, in the vicinity of the house. And a good thing for me, perhaps, that it was so, for conifers newly potted just previous to that Christmas frost, would probably have become firewood by this time; and this brings us to the reason for attending to such matters at this time of year, before the hurry and bustle of bedding out commences, and while the ground is cool and moist to encourage the plants newly shifted, for the potting is to be followed by plunging, and there the trouble ends. The cut inserted last month was from a drawing made in the winter of 1859-60, when the stone-bed was furnished with *Pinus insignis*, *Cephalotaxus Fortunei*, *Pinus cembra*, *Picea pinsapo*, *Abies Menziesii*, *Abies orientalis*, and small plants of silver-leaved box to fill in between. These were the remains of a collection of pot-conifers which had all grown out of bounds, and had by degrees been planted out on permanent stations. In the spring of 1860 this remainder was turned out, having got to fifteen-inch pots, so that it was time to begin again with a fresh lot of small nursery plants. This new lot now occupy the bed, which holds twenty trees, averaging thirty inches in height. My neighbour, Mr. Chitty, saved my time by running down to Cheshunt to pick them over for me, and make sure of straight, short, well furnished trees. The planting this time is—for the centre, a very handsome *Cephalotaxus*, three feet high, in an eight-inch pot; on each side of it, right and left, so as to form a pair, two *Juniperus communis oblonga*; on each side, the other way, say front and back, *Juniperus thurifera*. Thus we have a centre tree of a plumed habit, and remotely resembling ostrich feathers, and around it four erect, densely foliaged trees,

of delicate colour, and pyramidal outline. Then, for the outside circle, there are *Abies Frazeri* (*Picea Frazeri*), *Juniperus Chinensis foemina*, *Juniperus fragrans*, *Juniperus Gossainthana*, *Thuja gigantea*, *Pinus cembra*. These are all in pairs, each species opposite its fellow, so that the whole is symmetrical, and on the bedding system as to harmonies of colour.

Let it be understood that I give this planting only as an example of what may be done to keep up the style of a garden during the dull season. The plan may be extended in half a dozen different directions, and may be followed on the plan of planting out as well as by potting. But potting is preferable, because the trees are more completely under command. All my small trees are in six and eight-inch pots. The soil used is pure loam from Wanstead, with the turf in it well chopped over; no sand, no leaf-mould, but plenty of drainage and the stuff well rammed in. You will always observe that plants from nurseries have their roots all on one side. That is owing to the quick system followed in planting. A trench is chopped down, the trees are put against the side of the trench to the linc, and the trench filled in; hence they root away from the hard side of the trench into the soil that was broken up for them. The consequence of this is, that unless large pots be used, it is impossible to place the trees in the centre of the pots, which is of no consequence at all, if they are to be plunged. With a sharp knife cut clean away all long, fleshy, straggling roots, to reduce them to a moderate compass. Get them into as small pots as possible, but not to punish the roots excessively; pot them firm, and give a good soaking with water. As soon as they begin to make fresh root, the new fibres will touch the pot, and every kind of plant will thrive when that is the case, provided it has a shift when it has exhausted the space and the soil allowed it. Supposing you cannot command a supply of nice silky yellow loam, such as I use, then good turfy peat, mixed with an equal bulk of ordinary good garden-mould, altogether free of manure. Leaf-mould is an excellent soil for conifers, and in clay countries should be used freely with the best of the top soil that has been well frozen, and a proportion of burnt clay and sand to render the whole porous. That conifers often look miserable after being in pots a year or so is true, but the reason of that is, that they are not cared for, and the chief cause of their suffering is want of water. I drench my potted conifers once a-week all the summer long. In July they have a shift into larger pots, if they require

it, or they are simply turned out, a little of the soil removed from the ball, the trees replaced in their pots, and the deficiency made good with leaf-mould or Wanstead loam. It is worthy of remark, too, that the most valued and most famous of the race do as well in pots as the commoner kinds, if well cared for. *Wellingtonia gigantea* makes a beautiful tree in a pot, and may be shifted on till in the largest sized pot, and then be turned out without the loss of a leaf or a fibre. It may comfort Londoners and residents in the neighbourhood of manufacturing towns to learn that, at Stoke Newington, where tea-roses do not come to perfection, coniferous trees not only thrive in spite of smoke, but really enjoy it, and have a heartier and finer coloured foliage than the same species have in the country. Coal smoke is capable of either poisoning or feeding. The ammonia, that constitutes one of its ingredients, gives to most evergreens a richer colouring than they have in districts far removed from smoky influences. I have been comparing some of my trees that have endured the

smoke for more than three years here, with trees fresh received from the country, and there is so much difference, in some cases, as to make one imagine they are of different varieties. This is particularly the case with *Pinus cembra*, *Picea pinusapo*, *Cedrus deodara*, *Abies Menziesii*, *Biota compacta*, *Juniperus Hispanica*, Irish yew, *Taxus adpressa*, and *Taxus Canadensis*, all of which show a richness and depth of colour, and, though pot culture, a denseness of growth that it would be impossible to equal in plants of the same kinds in any country garden. I have just put out *Wellingtonia gigantea*, *Juniperus Virginiana*, and *Abies Kintow* in pairs, in a line of shrubs which form the background of a ribbon line, and they are now of the light green which they always have in the country. In twelve-months' time their colours will have changed to the same extent as if another wash of their own colour had been laid on, and will justify the remark you so often hear, "How beautiful the evergreens are in the suburbs of London!"

SHIRLEY HIBBERD.

HARDY JASMINES.

THE JASMINE has been, from time immemorial, a reigning favourite wherever it has been known. In Oriental poetry it is held as the symbol of the purest chastity and virgin love; and in colder climates, even where the idea partakes more of the material than in those sunny regions, it has formed the theme of many an early "soft inspiration."

The *Jasminum officinale* has been with us a favourite wall-shrub from beyond all record. The earliest account we have of it is from Gerarde, in 1599, who says it was then in common use for covering walls and arbours with. The various species form, with us, highly ornamental subjects for every situation in which flowers are grown, as they may be selected for the open air, even to the bleakest spots, the greenhouse or conservatory, and the stove. The number of species grown in British collections exceeds twenty, the most part producing handsome white flowers of the richest fragrance. The finest is *J. sambac*, a native of the East Indies, a very beautiful plant when grown in a stove; it also succeeds well in a greenhouse, if allowed a warm situation. This plant was first introduced and grown in the Hampton Court gardens, but from some cause was lost soon after. It was then known in Europe only at the

gardens of the Grand Duke of Tuscany, at Pisa, where, we are informed by Evelyn (*Memoirs*, etc., by Bray), a guard was placed over the plant, that no cuttings might be purloined. From this circumstance a very pretty tale has been manufactured, which relates that the gardener, being attached to a beautiful peasant in the neighbourhood, but obliged to defer the completion of their happiness from pecuniary reasons, contrived to escape the vigilance of the guard, and gathered a sprig of this much-prized jasmine as a present to his mistress. The young girl, wishing to preserve this love-token, stuck it in the earth, where it soon emitted roots, and, by certain judicious hints given by her lover, it soon became the means of securing them all they wished; hence, too, the origin of this flower being a chosen bridal present. The plant was not grown in England again till the year 1730, when it was sent to Miller, of the Botanic Gardens, at Chelsea. It is now found in all good collections. It grows best in a fresh turfy loam, and should be pruned back freely every autumn. The *Mandevilla suaveolens* was first imported under the name of Chilian jasmine, to which it bears a very close affinity. *J. grandiflorum* and *J. azoricum* are two very fine sorts. They are propagated by grafting on

the stocks of the common white jasmine. They are usually imported from the Continent, along with orange-trees, etc., Genoa supplying a very great quantity. They may be grown in pots, and are very suitable plants for window-culture, as they may be turned out of doors when not blooming, and do not require much protection during winter. The soil for these should be a good sound, turfy loam; they require large pots and a good drainage. Care should be taken to remove all shoots that may arise before the union of the graft. They also succeed admirably planted against a warm wall; the flowers here are larger and more numerous than when grown in pots. When planted, a good-sized hole should be made and a stratum of rough stones laid in to drain the soil, which should be loam from a common or pasture, with some old leaf-mould or potted dung. The plant may be pruned back pretty close when planted, and watered whenever the weather is dry during the first summer. They must be covered with mats as soon as the winter approaches, giving them air on fine days. They shoot again in the following April,

and, in a favourable situation, bloom profusely the second summer after planting. *J. revolutum* is another very handsome species, with yellow flowers; it, like the last-mentioned, may be grown in pots, or planted out. The only difference of treatment of any moment is that the shoots must not be shortened, as the flowers are produced on the extremity of the new wood. These may be propagated by layers: treated similar to layers of carnations, they strike very readily. *J. odoratissimum* and *J. gracilis* are both very delicately beautiful species. They succeed best planted in the bed of a greenhouse or conservatory, and should be allowed a warm situation, and frequently syringed during summer, or they are very liable to the attacks of the red spider. The soil most suitable for them is a mixture of loam and leaf-mould, and they should not be pruned more than can be avoided. *J. fruticosum* and *J. humile* are old inhabitants of our gardens, being hardy evergreen shrubs, with yellow flowers. There are several other species, besides a few varieties, but from those mentioned a selection might be made.

CHRYSANTHEMUMS OF 1861.

In our reports of the Chrysanthemum exhibitions, we made note of a few seedlings of great promise, which were described at the time, and of these we awarded the highest praise to Clark's Lady Harding, a rather imperfect specimen of which was exhibited by Mr. Salter at the Crystal Palace show. Garibaldi, shown by Mr. Bird at Stoke Newington, Albion Hall, and Crystal Palace, also took our attention as a pleasing intermediate flower, nicely modelled to a convex outline, regularly incurved, and of good substance and sturdy habit; for it was shown as gathered, and with foliage attached—the only trustworthy way of exhibiting seedlings. Golden Trilby, a beautiful sport of Trilby, shown by Mr. Forsyth, was also specified in our reports as of the highest merit, and certain to become a favourite. We are glad to find these, with others of equal excellence, and a few respecting which we would not now offer a decisive opinion, entered in the new catalogue of Mr. Salter, of Versailles Nursery, Hammersmith, so that gardeners will not have to send their orders to half a dozen different places in order to obtain all the best new flowers of the season. We subjoin, according to custom, descriptions of all the new flowers offered; and as Mr. Salter never yet sent out a bad one, those

who purchase from the list at random, and from the written descriptions only, will have flowers of real merit and unquestionable novelty, and a large proportion of real gems. But as there are few who will care to speculate at random on some forty high priced varieties, and many of our readers live in remote places, out of the reach of ordinary facilities for obtaining information as to the *bona fides* of new flowers, we here enumerate those which we can recommend, not only with confidence, but in assurance that the recommendation will bring us credit, as all our recommendations have ever done; for in these matters we exercise the utmost caution, and would prefer that a good thing should escape mention than that a bad thing should be thrust into prominence, to the injury of the interests of floriculture. Our own choice of the new lot would be, first, Mrs. Harding, the best chrysanthemum of the season. This will rank with the Queen, Mrs. W. Holborn, and the best of the old favourites, for stands of twelves and twenty-fours. Rifleman we should place next, for the sake of its colour, which is one we want, to break up the sameness of stands, consisting mainly of such as Themis, Novelty, Queen, etc., which, though distinct, are too much alike for effective contrast. Little Harry should

perhaps stand next as a splendid thing for cut blooms; it is naturally incurved, and will certainly make a beautiful specimen plant. *Ambrosia* and *Pandora* are somewhat alike, and both are novel in colour; both are of first-class excellence, but one will be sufficient where but a limited number of new varieties are grown. Among the other large flowers, we can recommend *Caractacus*, *Golden Hermine* (now well known), *Penelope*, *Queen of Whites*, now to be had true and permanent in its character. Of the new pompones, *Calliope*, an anemone ruby red, will prove good for specimens; *Diana*, a charming white, very late, and invaluable for the conservatory, and equal to the best exhibition kinds if it can be got out in time; *Florence*, a lively flower, and a tremendous bloomer; *Galatea*, fine form, and che-ful; *Princess Alice*, a rich and effective flower to grow with a set for high colour; *Little Gem*, a delicate fancy flower, late in blooming and in every respect an advance in a desirable direction. Of the remainder we must wait another season to offer any distinct opinion.

LARGE FLOWERING CHRYSANTHEMUMS OF 1861.

Ambrosia (Clark), rosy nankeen, beautifully curved, extra fine show flower.

Ariadne (Clark), cream tinted buff, new and pleasing colour, free and fine for specimens.

Badicea (Clark), rose and cream, incurved, very double, distinct, and fine.

Caractacus (Clark), rose carmine tipped blush, large and finely incurved, a splendid show flower (form of "Nonpareil").

Count Cavour (Clark), rose carmine, medium size, full.

Emily (Clark), delicate blush, incurved stiff shell petals.

Garibaldi (Clark), red chesnut and orange, incurved and fine habit.

Golden Hermine (Salter), a sport of "Hermine," producing bright golden orange flowers, tipped carmine, large, double, and finely incurved, a most desirable acquisition for cut blooms and specimens.

Golden Trilby, gold yellow, a fine sport of Trilby, and with all the good properties of the parent.

Grand Turk, rose purple, incurved.

Juno (Salter), large white anemone.

Little Harry (Smith), bright golden amber, new in colour, medium size, double, and perfectly symmetrical; the petals are stiff, smooth, and finely incurved, the habit dwarf and compact, one of the finest naturally incurved flowers ever raised, every bloom being a perfect model, and for pot culture unsurpassed, awarded a first-class

certificate by the Floral Committee of the Horticultural Society.

Lady Harding (Clark), delicate rose pink tipped blush, a most valuable addition to this colour; the flowers, which are produced in great abundance, are large, very high in the centre, and most beautifully incurved; extra fine, either for cut blooms or specimen plants; first-class certificate of Floral Committee of Horticultural Society.

Leda (Clark), large white, incurved, and fine habit.

Linda (Clark), large purple crimson, tasselled, and very attractive.

Lord Elgin (Clark), bronzed rose, large and finely incurved.

Pandora (Smith), rosy nankeen with yellow centre, very full and beautifully incurved, extra fine show flower.

Penelope (Clark), rosy orange, large, very full, of great substance, and beautifully incurved, a splendid show flower.

Phœbus (Clark), brilliant golden orange, medium size, free blooming, and compact habit; a valuable late-flowering conservatory plant; late.

Prince Consort (Clark), crimson violet, full and incurved.

Pyron, red chesnut tipped gold, large and incurved.

Queen of Whites (true), large white, full and finely incurved.

Rifleman (Clark), dark ruby red, large, double, and beautifully incurved, fine habit, early and free blooming.

Yellow King (Salter), very large yellow, incurved, a fine sport of "King," and noble late flower.

FIRST SECTION.—POMPONES.

Calliope (Salter), anemone, bright ruby red, with full high centre, fine habit, and abundant bloomer; valuable for specimens.

Canary Bird (Salter), clear yellow, fine form and free, very dwarf and compact habit.

Diana (Salter), hybrid, pure white, fine form, and profuse bloomer; a valuable late flowering variety.

Florence (Salter), dark cherry with light centre, very pleasing colour and most abundant bloomer.

Galatea (Salter), clear lilac, full size, very double.

Gaiety, bright red with orange border, dwarf and pretty.

Jessie (Salter), orange amber, flowering in compact heads, very dwarf and fine for specimens.

Princess Alice (Salter), dark rose car-

mine, most brilliant colour, fine form, and very attractive.

Priscilla, clear orange, quilled, dwarf and pretty.

The Little Gem (Ingram), delicate rose

peach with distinct white border, very fine and full, of dwarf bushy habit—a lovely variety, remaining in bloom throughout December, was raised at the Royal Gardens, Windsor, by Mr. Ingram,

CELOSIA AUREA—HOW TO PREPARE A STAPLE COMPOST.

AMONG recent introductions, or rather among plants which have recently become popular, that which heads this notice is not the least interesting, for whether considered in relation to its adaptability for a single specimen, the elegance of its habit, or the desirableness of its golden masses of colour for conservatory decoration, it is certainly one of the most useful tender annuals which has of late years been brought into notice. The brothers Thompson, to whom we are indebted for its general distribution, have grown it for some eight or ten years past, but whether they won it by cultivation from the yellow cockscomb (*C. cristata flaveo-cens*), or obtained it by foreign introduction, I am not prepared to say; but however it was procured, I for one should be delighted to see a crimson variety of the same habit, for I regard this pyramidal variety as a much more useful and elegant plant than those stiff, formal, waxwork-looking things upon which gardeners of the olden time, and even some of modern date, have given themselves so much trouble. With the blue aprons of my younger days, "my cockscombs" were scarcely less important in point of cultivation than "my cucumbers" or "my melons," and even some at the present time consider it a grand achievement to grow a cockscomb eighteen inches to two feet over the comb. For my own part, I see but little beauty in these stereotyped forms; it may be want of taste, but I would rather see one good specimen of this feathery variety than all the formal things that may be grown during the present year. I would also in this place wish to impress upon cultivators the importance of retaining the feathery form of *Celosia* in other colours. The "Florist" has figured a crimson variety which is no doubt very pretty, but we must not rest until we get a crimson variety equal to the orange one in point of habit. Those sticklers for "form" who can see no beauty except through a pair of geometrical spectacles, will no doubt object very strongly to throwing the old form of cockscomb out of cultivation; but that I do not want so long as they will assist me to obtain a variety which will be more useful in a decorative

point of view, and certainly not less worthy of cultivation.

Now, in the cultivation of all soft-wooded and free-growing plants, the great desideratum is to have a suitable compost, a sort of general stock, which, with the addition of a little sand, etc., to make it, as may be needed, light or heavy, will be ready at all times. This is best prepared by procuring two loads of fresh horse-dung as much impregnated with urine as possible. Throw it together into a heap to ferment, and if not sufficiently moist, sprinkle it with the drainings of the stable. It will require to be turned two or three times until it gets in a uniform state as to heat. Then procure four loads of nice turfy loam from an old sheep pasture, and cut as thinly as possible; chop this roughly over, and then having placed a layer about a foot thick upon the ground, proceed to build up a heap in alternate layers of the hot dung and loam, taking care to use the dung in sufficient quantity at the commencement to insure the mass heating in a regular manner. If there should be any doubt on this point, cover the whole with hot dung to assist the fermentation, as the moisture should heat sufficiently to destroy every sign of insect or vegetable life in the mass. After sweating for a fortnight in this manner, turn it over, throwing the sides of the heap into the middle, and then let it heat again, only covering with mats to throw off rain, and also in some measure to prevent the loss of ammonia. When the heat subsides, turn the heap over frequently, mixing the loam and dung as intimately as possible, but still not breaking it too fine. This turning may be repeated frequently, so as to get the mass well aired; but at the same time great care must be taken to keep it dry. Some of the outside portions of the compost will be fit to use after it has been exposed to the action of the atmosphere for a few weeks; but use it with caution, for if properly prepared, it will be almost as strong as guano, and much too strong for indiscriminate use. Compost of this kind sufficient for the use of a season should be prepared every autumn while the soil is

dry; and if a sufficient stock is prepared to have six months' airing before any of it is used, it will be so much the better. Where hunters or other houses are kept in loose boxes, it is a capital plan to bed them with leaves instead of straw, and a quantity of that taken when it has accumulated to the depth of fifteen or eighteen inches, and got quite hot and used, instead of dung from litter, makes the finest compost in the world. Compost like this, or similarly prepared, is the secret of a large proportion of the splendid plants seen at the metropolitan exhibitions, and it also to some extent supplies the reason why, of two plants growing in the same sized pot, one in point of vigour may be cheap at 3s. 6d., while the other would be dear at a third of the price.

Having prepared the soil, we will next proceed with the cultivation of the *Celosia*. I generally make three sowings, one in February, another in March, and the third in April, and these give a good succession of bloom to Christmas or even into the new year. To start the seeds strongly and well a bottom-heat of 80° to 90° is necessary; sow the seed thinly, but directly the plants are up place them close to the glass, and give air freely to keep them dwarf and stocky. As soon as the plants are sufficiently strong, pot them off into "thumbs," using equal parts of the preceding compost and mellow loam intermixed with sand and charcoal. Give the young plants the advantage of a

bottom-heat of 80° at the least, a moist atmosphere, and as much air night and day as the heat of the frame, pit, or house, will admit of, always bearing in mind that the night temperature should not fall much below 60°, while in the day time a brisk moist heat rising to 80° or 90°, with sun-heat and moisture, will not be too much. As the pots fill with roots, shift into those of a larger size, using the same compost, but decreasing the proportion of sand and charcoal as they approach their final shifts. Fine plants may be grown in 11-inch pots, but if you wish to attain the fullest perfection, 13 or 15-inch pots will be necessary. A really well done specimen of this *Celosia* should not be less than four to five feet in height, proportionately bushy, branched to the foot, and with its plumes of rich orange flowers nodding in hundreds. After the plants get too large for pits or frames ainery or plant-stove is a suitable place for them; but when the flowers begin to change colour, more air and a comparatively dry atmosphere is necessary, always bearing in mind that the red spider likes to feed upon the cock-comb, and, therefore, it will be necessary to keep a watch to arrest its ravages. The *Celosia* answers well for conservatory decoration in summer and autumn, but after the nights get cold the temperature of an intermediate house or cool stove is the most suitable for it.—P., in *Gard. Chron.*

CALCEOLARIAS FOR BEDDING.

ALBIRA (Cole), yellow, with brown spot; Attraction, crimson, with orange margin and cap; Camden Hero (Barnes), rich crimson; Canary bird, pale canary yellow; Gem, orange brown, margin of yellow; General Canrobert (Henderson), rich rosy

crimson; Golden Cap, brown and yellow, with yellow cap; King of Yellows; Negro (Nelson), darkest crimson of all; Pilot (Cole), crimson brown; Sultan, dark crimson; Wildfire (Henderson), brownish crim-

TO CORRESPONDENTS.

CATALOGUES RECEIVED.—"Select List of Kitchen Garden and Flower Seeds sold by G. Cooling, Irongate, Derby." A neat, well-arranged, and sufficiently copious list for all ordinary purposes. The flower seeds are admirably arranged. Mr. Cooling gives prominence to the Empress Eugenie potato, which is certainly the best of the early ones.—"Catalogue of Flower and Vegetable Seeds, 1861, Messrs. E. G. Henderson and Son, St. John's Wood," contains eighty-four pages of seed lists, descriptions of novelties,

hints on cultivation, and suggestions to amateurs in the selection of subjects for garden decoration. A very novel feature is the list of "ineffectual annuals," reference to which will enable the purchaser of seeds to steer clear of plants that are either useless for ornament, or beaten by other and better things in their respective classes.—"Sutton's Spring Catalogue and Amateur's Guide for 1861." The improvements effected in this admirable work entitle Messrs. Sutton to the highest praise, and the

thanks of amateur gardeners generally. It is a text-book of culture as well as a guide to the selection of varieties, and we know of no better handbook for an amateur to work by, and refer to every day all the year round. There are four lithographic plates of sample roots, peas, etc., to show the distinctive forms of the principal varieties.—“Thompson's Gardening Book of Annuals.” Noticed in another page.

PLANTING AN ANGLE.—*H. M. G., Whittington.* You cannot do better than fill in the space with hybrid perpetual roses on their own roots. The segment of a circle, 1, 2, 3, 4, Jules Margottin, two feet apart; the centre circle, 5, General Jacqueminot, eighteen inches apart; the two crescents, Madame Vidot or Caroline de Sansal or both, either mixed, or Madame in one bed and Caroline in the other. Nothing agrees with roses so well as oses. If you want evergreens you will find plenty of notes on them in former issues.

CITRON Gourd.—*R. Saltmarsh.*—The following, from Messrs. E. G. Henderson and Son's seed list, 1861, exactly meets your query:—“This is a truly valuable and highly-interesting esculent fruit, and constitutes a true variety of the hard-fleshed water-melon, which, though not edible in its raw state, is now proved and strongly recommended for its valuable adaptation in making a very delicious preserve. In growth it is free and vigorous, displaying its fruit conspicuously between the rich foliage. It requires the same treatment by seed as the common ridge-cucumber in being raised in an ordinary hot bed, or under a portable glass where intended to be grown, being carefully ventilated from under and shaded from strong sunlight until the young plants are vigorously established, and then eventually planted out upon partially raised ridges of richly-prepared ground in May, as the weather may prove favourable, and as soon as all danger from frost is past. In the event of a trying season it should, in common with all fruits of similar habit and interest, be protected by hand-glasses over each plant-group, until the running habit of growth be fairly started, and the air be found congenial for plants of this section or tribe. The fruit is nearly spheroidal in outline, averaging from three to five pounds in weight, and is distinguished by its dark bottle-green tint in mottled stripes on an apple-green ground colour; and these, apart from its preserving quality, form a very ornamental effect as seen upon a raised bed, trellised wall, or conical rounded earth-mound. When ripe it neither changes its colour nor becomes soft, and when carefully handled it will hang up and retain its colour throughout the winter months. The following directions are given as a successful method of preparing the preserve:—‘Pare the fruit and let out the seeds, taking out the soft pulp for after use, and weigh the remainder, cutting it into convenient lengths and thicknesses. To every pound and a quarter of the firm fruit, apportion a lemon and a pound of the finest double-refined loaf-sugar, with a pint and a-half of spring water. Then pare the lemons thin into a basin, and squeeze the juice to the ring, and let it stand to get out the flavour. Put the fruit and most of the water into the preserving pan, and stir it till it is soft and transparent, which will be from three to four, or even five, hours, adding the remainder of the water, if needed, from time to time, until the opacity of the preserve gives place to transparency in the flesh. When boiled soft, add the sugar and scum it; and when the syrup is well formed, strain the lemon-juice to it, and by the time this is well incorporated the preserve will be done. It ought to be of a trans-

parent clearness, and of a fine apple-green colour and citron taste.’ If duly prepared, it forms a most valuable addition and equivalent as a sweetmeat, and a delightful change from the rich aroma of the raspberry, or the pleasant acidity of the marmalade, and it boiled somewhat longer than the directions given, it assumes a Guava-like flavour, which tastes excellent. The soft pulp will also form a good preserve with the same preparation as the above. If used before the fruit becomes over ripe, the pulp is tolerably solid. Seed packets, 1s.”

DISEASED EUCONYMUS.—*W. W. P., Moreton in Marsh.*—The leaves are neither mewed nor stained by insects, they are simply killed by frost, and you will probably lose the plants altogether. The larger leaves appear to be the variegated variety. The two pairs of compartments for Perilla and Cineraria Maritima will be in good taste, but a pale yellow calceolaria, such as *Amplexicaulis*, would be better, to bring out the bronze of the perilla. *Gyerium argenteum* will do very well in a north aspect. We do not correspond with the person you name, and we know nothing of his terms of business with the trade.

TULIP ALIASES.—*Exhibitor.*—It would occupy a whole number of the FLORAL WORLD to give anything like a list of tulip synonyms. Impostition has been practised wholesale by the renaming process. Mr. Slater, in the “Amateur Florist's Guide,” enumerates 110 varieties having 260 aliases. As for the Chollaston tulips, many of them are of no use for competition, but there are some beauties amongst them, and the trouble is to get at their original names, for they rejoice in aliases more than any others; one of them, No. 20, has twelve different names. The truth is, the growers should adopt a more definite system of nomenclature, for all the varieties are liable to variation, and a slight variation is generally seized upon as a pretext for a new name. You may frequently see in the same bed, two or three distinct forms of Devonshire, Polyphenus, Platoff, etc. But the trick of naming them is a fraud.

VARIEGATED PLANTS.—*C. C. Rodwell.*—The best list of hardy variegated plants is that in Mr. Salter's new catalogue, and a most important service is rendered by Mr. Salter in adding the synonyms, so that a person having a plant under one name may save himself the trouble of ordering it under another.

RIDGE CUCUMBERS AND GEOTHERMAL CULTURE.—*R. Swithers.*—Though you have so large a supply of heating material, we cannot advise you to proceed as you propose in raising and putting out ridge cucumbers at once. Depend upon it, however large your heating-bed may be, unless covered with glass, cucumbers will not grow until the atmosphere is more genial in its temperature. Geothermal culture is yet in its infancy, it may never come to manhood, if it does, it will not be by means of vast masses of fermenting dung laid under beds in the open air, but by heat from furnaces or boilers conducted through suitable chambers under the soil, and economized by the aid of glass. Imagine a plantation with the roots at 70° and the surface at 30°, or even lower on a frosty morning in March!

PROPAGATING.—*Rose.*—Do not use so much heat. Most amateur gardeners aim at a temperature which they have not sufficient skill to command. Purple orach and perilla do not want heat at all. A temperature of 60° to 65° will do for the seeds, and cuttings of every kind of bedding plants. **GOOSEBERRY CATERPILLAR.**—*R. C.*—Heliober powder, dusted over the trees early in the morning, will effectually clear away this destructive pest.

THE
FLORAL WORLD

AND

GARDEN GUIDE.

APRIL, 1861.



WINTER is over at last ; the bluster of March is over ; spring flowers are rather late, but they are as bright as ever, and, of course, as welcome. We may now take stock of gains and losses : the gains will be in knowledge, the losses in plants ; some of them such as we have long considered the hardiest of the hardy. Tired as we are of talking about the "extraordinary weather," we must not let the occasion pass without an endeavour to determine what, among the special subjects of horticultural care, are able to endure the severest winters known in this climate, and what are to be regarded as likely to succumb when the weather reverts to old-fashioned

types, and puts our plans to an ultimate trial. Gardening is too expensive a hobby, and surrounded with too many anxieties, for any of its accidents to be treated lightly, so there need be no apology for our again calling attention to the rigours of the past season, and endeavouring therefrom to deduce a few conclusions of real utility.

Taking the ornamental trees in their several degrees of importance, conifers will doubtless stand first. On wet soils the losses have been more numerous, and more to be deplored as to the value of the trees destroyed, than on dry soils ; and from these we learn the old lesson of the importance of effectual drainage. *Pinus insignis* has been almost everywhere killed. *Pinus Montezumæ*, *muricata*, *Ayacahuite*, *Llaveana*, *Roylei*, and *cembrioides*, eleven years planted, quite killed at Aldenham Abbey, Herts. Among various other conifers that have been extensively planted of late years we regret to add that *Araucaria imbricata* has everywhere suffered, and in some places has been killed as completely as if passed through fire. The oldest specimens have endured the trial with the least harm, but the mortality among young trees has been general. In a piece of seedling *Araucarias* in Mr. Glendinning's nursery about one-third are killed outright, and the remainder are untouched. Many *Araucarias* that have

escaped death have lost the terminal bud, which, as a rule, is equivalent to the loss of symmetry for ever, though in some cases top-shoots will perhaps start away and form good substitutes for the original leaders. The beautiful *Saxe-Gotheca conspicua* is in many sheltered places hopelessly injured, in exposed places completely gone. Fitz-Roya Patagonica is variously cut up, in some places so as to be irrecoverable, in others sufficient to spoil its beauty for some years to come, but, generally speaking, death has spared the species. A well-established and fine pair of *Librocedrus Chilensis*, in a sheltered border in our own garden, where the thermometer did not fall to zero on the night of December 25, are so scathed that we doubt if they will ever recover so as to be sightly. Many young plants of *Cedrus Deodara* have perished on bleak hill-sides and boggy grounds. Cedars of Lebanon have not utterly escaped; *Cupressus Goveniana*, *torulosa*, *Uthdeana*, and *macrocarpa* have been thinned in a terrible manner, but have not been swept away so completely as others named above. *Thujiopsis borealis* and *Sequoia sempervirens* are sufferers almost universally, but the survivors of this class of conifers can be cut to shape, and in a few years will be none the worse for the visitation.

All things considered, this list of conifers incapable of withstanding the utmost rigours of our climate is not disheartening. Though we cannot complacently spare any that have been enumerated as swept away or cut about, we can enumerate a good list of species that have passed through the ordeal unscathed. On the same bank in our own garden where *Pinus insignis* has become a browned corpse, with not a drop of living sap even in its roots, *Cedrus Deodara* lost only a few insignificant branches and all its leaves, and is now breaking beautifully, and will soon be covered with its plummy foliage, as handsome as ever. Young specimens of *Thuia gigantea* have lost their leaders beside *Abies pinsapa*, which has not a stain upon it, and every bud swelling as if we had had no winter at all. Fortune's *Cephalotaxus* looks a little shrivelled, but is breaking well, and may be reckoned as hardy as a common yew. The noble *Wellingtonia gigantea* has not suffered anywhere, whether on wet or dry soils. *Pinus excelsa*, *cembra*, *Gerardiana*, *Cryptomeria Japonica*, *Cupressus funebris*, *Lawsoniana*, and *MacNabiana*, the *Torreas*, *Thujiopsis dolabrata*, *Abies Deodara*, all the neat habited conifers enumerated in our recent articles for culture in pots, the American *Thuias*, the true *Thuia Japonica*, the golden *Thuia*, *Abies Khutrow* and *orientalis*, *Librocedrus decurrens*, *Biota compacta*, *Taxus baccata*, *adpressa*, *Canadensis*, and the fancy-foliaged yews are all safe and unhurt, and, as far as concerns temperature, evidently capable of bearing anything likely to befall them in the whole range of the British Islands. *Cephalotaxus drupacea* has stood the last three winters in the grounds of Messrs. Lawson, at Edinburgh, and may, therefore, be added to the lists of safe kinds to plant anywhere. We have not seen or heard of a crippled juniper. In our own garden, the tops of young plants of *Juniperus Chinensis femina*, and *Gossainthanea*, are a little browned, but not to an extent to give occasion for serious lament, while the handsome *Hispanica*, *Phœnicia*, *Virginiana stricta*, *V. stricta glauca*, and the procumbent savins, are all unhurt.

Among miscellaneous evergreens there has been a clean sweep made of all the evergreen *Euonymus*, but in most cases they are alive at the root, and will break again. We have taken up all our plants, and put the stools in nursery quarters to make plants of the best of them at a future

time, or grow new stock from cuttings, according to the style in which they throw up their new growth. *Aucuba Japonica* is generally hurt, but not seriously; in a few places it is killed outright, but we must not label it with the word dangerous. Sweet Bays, *Lauristinus*, magnolias, *Phillyrea*, *Ilex latifolia*, and *Perado*, *Grieslinia littoralis*, and *Eugenia Ugni* are great sufferers. In very many cases the trees are dead, root and branch, but except the *Eugenias*, which are fit only for the rubbish-pit or the fire, we believe that in the worst cases they will all be found to be alive at the root, and the safest way to deal with them will be to leave them alone till the end of this month, or even till the middle of May, and then to remove those that show no sign of breaking, and prune away the dead wood from those that make a fair start. Where the presence of stunted and half-naked shrubs will be a positive eye-sore, we would advise the lifting of them in May, and supplying their places with specimens worthy of the positions. If planted in the reserve ground, many of them will make good growth, and in a year or two may have conspicuous places again. Others will be fit only to take cuttings from for propagation during July and August.

A large number of interesting American and Chinese plants which we have been putting out during the past three years have suffered materially. *Berberis Nepalensis* is lost; *Berberis Hookeriana* killed to the ground, but alive from the collar downwards. *Berberis glumacea* looks as if it could not possibly recover, but it is certainly not dead. Ten species and varieties of *Escallonia* are gone; *Garrya elliptica*, *Ceanothus papillosus*, under a south wall, *Rhamnus alaternus*, *Quercus ilcx*, and even the reputed hardy *Arbutus Unedo*, are all killed, or but barely alive at the collar. There is scarce a pampas grass left alive in the country.

On the bright side of this picture we have *Berberis Japonicus* unhurt, and now pushing with vigour, its old leaves nearly as fresh in colour as they were last autumn. *Berberis dulcis*, *Jamesonii*, *Darwinii*, *aristata*, *fascicularis*, and the old *aquifolium*, unhurt; *Cotoneasters* of all kinds, ditto; all the *Baxus*, ditto; *Rhododendrons*, *Gaultherias*, *Minorea* holly, variegated hollies, and the beautiful *Ilex Sheppardi*, as prim and thrifty as in November last; *Ligustrum lucidum sempervirens* has lost its leaves; so for once we may trip up Mr. Standish, who says it *never* loses its leaves; but it would be cowardly to do so when dealing with a winter such as no man living ever saw the like of. *Prinos lucidus* has lost its leaves, but is quite hearty even in a damp border of heavy loam, which is not a good place for it. The charming *Skimmia Japonica* holds its huge bunches of scarlet berries, that no bird will eat and no insect mutilate all the winter long, as if some day it would prove a formidable rival of the holly, as it already rivals it in slowness of growth. Our favourite *Azalea amoena* looks much the worse for the visitation, but is breaking freely, and the knife will make the plants as respectable as ever. The bloom will probably be *nil* this season.

Among deciduous trees and shrubs, *Cercis*, *Liquidambar*, *Weigelia rosea*, *Forsythia viridissima*, *Calycanthus floridus*, *Rhus cotinus*, and all the *Spiræas*, have come through the trial without losing an inch of wood, with the exception of *Weigelia*, which will want pruning into order. *Chimonanthus fragrans* is, we fear, *non est*. If any of our readers have saved old flowering specimens we shall be glad to learn, for it is too good a thing to be forgotten when we come to this severe test of the relative

hardiness of the shrubs we so largely depend upon for out-door decorations.

Roses have suffered to a tremendous extent. At the Cheshunt Nurseries the losses may be set down at near 20,000 plants. We have not heard to what extent Sawbridgeworth has been ravaged; Mr. Cranston at Hereford, and Mr. Standish and Mr. Noble at Bagshot, Mr. Francis at Hertford, and the Messrs. Lane at Berkhamstead, have had immense losses. Mark this, the greatest mortality has been among worked plants; roses on their own roots are mostly alive below the surface, and where they were heavily mulched in time, according to the dicta of the books, they will throw up as good a growth from the eyes about the collar as if nothing had happened. Teas and noisettes have suffered most among the classes, Bourbons have not escaped, and of the hybrid perpetuals we learn that some that were thought the hardiest, proved the weakest, and vanished altogether. Among the teas and noisettes that have escaped, we must mention Gloire de Dijon, which appears to be frost-proof; so to its intrinsic beauty, full habit, capability of enduring smoke, we may now add a farther qualification to give it rank as one of the most useful varieties in existence. Triomphe de la Duchere, Fellenberg, Vicomtesse Decazes, and Caroline Marniesse are but little hurt, but death has fallen upon Ophirie, Triomphe de Rennes, Miss Gray, and, almost without exception, all other teas and noisettes openly exposed to the influences of the weather. Of hybrid perpetuals it is impossible now to make a complete list of dead and wounded, but we can comfort rose-fanciers with the assurance that the best of recently introduced varieties are as hardy, perhaps more hardy, than some of the older kinds they have superseded. Victor Verdier, Eugene Appert, Senateur Vaisse, Louis XIV., Celine Forestier, Anne Alexieff, Comtesse de Chabrilland, Eveque de Nimes, Lord Raglan, Louis Chaix, Gloire de Santenay, and Admiral Nelson are, generally speaking, unhurt, though the plants were mostly young, and in many instances were put out last season. It is therefore certain that the rose has lost nothing of its hardiness by high breeding.

WE did not expect so soon to be called upon to raise a new defence of tiffany. Mr. Gosse has raised the question by a distinct assertion that in his hands it has proved a failure. We must remind our readers that we never suggested its use as a substitute for glass, except in certain specified cases; as, for instance, for blooming chrysanthemums—which, if exposed to the weather during November, are usually more or less injured, and the past three seasons have been all but destroyed, when at their highest state of perfection—for the growth of orchard-house trees which do not need artificial heat, but mere protection from night frosts during their season of bloom; as a protective material for tender roses and for all kinds of nearly hardy plants with ornamental foliage. To these suggestions have been added various testimonials of the efficiency of tiffany, and memoranda of its adoption at the Wellington Nursery, and other places, where plant houses of all possible kinds are in constant use and variously tested as to their merits. It should be remembered also that the proposal to use tiffany came originally from our Bagshot correspondent, Mr. S. Waymouth, who gave an account of Mr. Standish's adoption of it, and that he was followed by

Mr. Standish himself, who described in detail his mode of constructing these cheap houses. Mr. Waymouth has favoured us with a communication headed "Tiffany not a failure." He says, Mr. Standish continues to use tiffany, which is a sufficient guarantee of its power of repelling frost to the extent previously stated. We all know, or should know, that Mr. Standish stands at the head of his profession, that his name has been before the public for years as an originator of methods as well as a producer of thousands of the most valuable garden hybrids, and that he is about the last man either to make or to propagate a mistake in such matter. Then we can have the testimony of Mr. Rivers, who strongly recommends tiffany for cheap orchard-houses. Mr. Fleming has been down to Bagshot, and has gone home intending to make a feature of it in the grounds of the Duke of Sutherland, under his charge. Mr. Veritas also hurries to the defence of tiffany, which he was once prejudiced against as moonshine, and the first cause of his change of opinion was finding it in extensive use at the Cheshunt Nursery of Messrs. G. Paul and Sons, where they have managed to save roses in as fresh and lively a condition as if there had been no winter at all, while in the open grounds there the same kinds have perished by thousands. Mr. Veritas now says—"I can justify all that has been said in favour of these cheap houses, and am sure they must increasingly become necessary adjuncts to every establishment where plants are largely grown." We may add to this that Mr. Veritas is one of the most experienced nurserymen living on the north side of London. As the name is not sufficient for identification, we must refer those who wish for further evidence to Messrs. Paul themselves, who will very gladly admit any number of visitors desirous of information. There is no hole-and-corner notion in the recommendation of tiffany. The nurseries named are as public as the pages of the *Times* newspaper. Mr. Gosse has plainly stated matters within his own knowledge, with the best of objects in view, namely, to guard the unwary from being deceived. But Mr. Gosse is wrong; and tiffany is now fairly out of the region of mere experiment, and established as an appliance admirably suited to certain uses, and eminently a boon to gardeners of limited means.

NOTES OF THE MONTH.

EXHIBITION OF HYACINTHS.—Messrs. Cutbush's Nursery has been visited by thousands of persons since the opening of the show of hyacinths, which we are happy to say was as good a show as any held in former years, notwithstanding the generally inferior condition of bulbs this season. The exhibition was held in a lean-to house, the pots plunged in moss and the plants so grouped as to form effective masses of harmonizing colours. Edgings of crocuses and primulas gave the whole a finish, and proved the Messrs. Cutbush to be masters of taste as well as of culture. Among the varieties most conspicuous for their fine spikes and bold colours, were most of those which have been recommended in the *FLORAL WORLD* (Vol. i. p. 233; ii. pp. 205, 234, 239, 286; iii. pp. 43, 266). Others of special excellence were the following:—*Solfaterre*, orange scarlet, very novel and brilliant in colour, and beautifully formed; *Noble par Merite*, flesh pink, striped with crimson, a fine fancy flower for culture under glass; *Miss Burdett Coutts*, a very grand white; *Snowball*, also pure white, but a smaller spike than the

last; Princess Alice, violet, rich and dark; Victor Hugo, a really good yellow, which is saying a great deal for any hyacinth; Lord Elgin, rosy salmon and large; Honneur d'Overeen, purplish crimson; Lord Clyde, brownish lilac, white eye, a rich and charming flower, the spike large and the bells beautifully formed; General Havelock is the best black, as it was last season, when it shared honours with Prince Albert.

ROYAL HORTICULTURAL SOCIETY.—A general meeting of the Society was held on Tuesday, the 19th, at the new gardens, South Kensington, for the purpose of electing fellows, and for a ballot for the distribution of seeds. The Right Rev. the Lord Bishop of Winchester occupied the chair. Among the numerous body of fellows present we observed the Earl of Erne, Lord J. Manners, Judge Des Barres, Sir Peter Van Notten Pole, Bart., Sir J. P. Boileau, Mr. S. Gurney, M.P., Lieut.-General Fox, etc. Among the fellows elected were the Right Hon. the Earl of Aylesford, the Earl of Gifford, the Hon. W. F. Byng, Lady Murray of Edinburgh, Lady Hume Campbell, and about 130 others. After the ordinary meeting had been concluded, a special general meeting was held to receive the report of the council. Dr. Lindley read this document, which stated that the probable cost of completing the substantial works in the gardens would be £70,000 instead of £50,000, as stated in a previous report. The council had received already nearly £40,000 on debentures, and they recommended the Society to give them express powers for raising an additional £10,000. Without that sum the council would be unable to complete the gardens on the plans which they considered advisable, and which had received the sanction of his Royal Highness the President of the Society. On the motion of Mr. C. Wentworth Dilke, seconded by Mr. H. T. Hope, the report was adopted, and power was given to raise the additional £10,000 as required.

HINTS ON THE CULTURE AND MANAGEMENT OF THE CAMELLIA.

ALTHOUGH there are but few plants which die a harder death than the camellia, yet it requires some practical skill to grow and bloom this plant well. The camellia may be propagated from cuttings, seeds, grafting, or inarching with equal success, if properly managed.

The most proper time of the year to propagate from cuttings is about the beginning of October. The best sorts for this purpose are the single red and the Warataw. The cuttings ought to be planted in pots filled with silver-sand, then placed in a close frame or under hand-glasses, until about the beginning of December. The cuttings afterwards ought to be placed in a gentle heat. The best method is to fill a frame with tan, and place them in it; the air in the frame should not exceed 60° of Fahrenheit in the winter months. The heat ought to be increased as the days lengthen. The best time to inarch the camellia is the months of March and August. None but the young shoots of the same season will grow in August; but in the spring, branches of three or four years old will readily grow

by inarching. An erroneous idea prevails among many who grow the camellia as regards the method of inarching. Many inarch large branches of the double sorts on the single, with the intention of forming large plants at once; expecting by this method to gain several years: but they are wofully mistaken! Plants so treated oftentimes stand still for many years without ever making any fresh shoots, unless the stocks they are worked on be in a very healthy state; even then the shoots they make are seldom more than an inch or two in length.

Where the stocks are not well rooted, grafting ought to be resorted to. The best month for grafting the camellia is December, as the sun's rays at that time are not as powerful as in the spring. The grafted camellias ought to be treated in the same way as the cuttings after their introduction into heat. We have seen a shoot of *Camellia reticulata*, which had grown to the height of four feet and one inch in one season, the second year from its being inarched. The stock on which this shoot

was inarched was about an inch and a-half in diameter, and the branch laid on not more than four inches in length.

The best compost for camellias is a portion of good loam, peat, rotten cow-dung, and decayed oak leaves.

The composition ought to be as follows :—half loam mixed with a small quantity of cow-dung, a quarter of peat, and a quarter of decayed leaves: these ought to be laid in a heap together and frequently turned and mixed together, and exposed to wind, frost, hail, rain, and sunshine for two years previous to its being used. The proper time for shifting the camellia is about the beginning of August, or when the shoots are ripened. Great care ought to be taken not to put plants which are not well rooted into too large pots; this being one of the greatest evils among woody greenhouse plants. The great aim among gardeners ought to be to have the different varieties in bloom in the months of January and February, that being the time of the year when a flower of any sort most gladdens the eye. To effect this the plants in the summer time ought never to be placed in the open air until their buds are about the size of peas. Some gardeners place them in a gentle heat early in the summer, which greatly assists their early flowering.

When camellias are placed in the open air too early in the summer, they generally do not bloom until April and May, when the heat of the sun is sometimes so powerful as to cause the buds to drop, unless they are kept shaded. Camellias, under the care of many gardeners, drop their buds just about the time they ought to be in bloom. When this occurs among plants which are well rooted, the cause is, in nine cases out of ten, for want of a proper supply of water. They require to be most bountifully supplied with this element when they

are coming into bloom. It often occurs that the surface of the mould appears continually wet, while the mould underneath is as dry as snuff, and probably has not tasted a drop of water for years. When such is the case the surface of the mould ought to be frequently stirred up, and a pointed instrument introduced in order to let the water circulate freely, and prevent it from running down the side of the pot; at other times the mould becomes completely saturated with water and seems as heavy as a lump of lead: this will also cause the buds to drop. This is the baneful effect of putting them into dirty pots and of worms getting into the pots among the mould. When this occurs you may bid good-day to the welfare of this or any other plant, unless they be speedily shifted and the old mould shook away; then they ought to be placed in a clean pot only large enough to contain the roots.

Although the camellia requires a plentiful supply of water at certain times, the pots ought never to be placed in pans for holding the water, as the water soon becomes stagnant and is sure to injure the plant: the pots in all cases ought to be well drained. The best situation for camellias in the summer season is in a shady part of a grass lawn: the grass may be suffered to grow up among the pots, it being of great use in order to keep the roots cool in the hot months of summer. The pots ought always to be placed on boards in order to prevent the worms from getting into the pots. The situation where they are to remain in the summer ought to be overshadowed with lofty trees, in order to keep the sun from scorching the leaves; this not only prevents their being scorched by the sun, but gives the leaves a healthy, dark green appearance.

THE GLORY OF THE COUNTRY.

On the summit of Clent Hill, in Worcestershire, adjoining the classic shades of Hagley, the domain of Lord Lyttelton, there was formerly a double seat on which was inscribed—*DIVINA GLORIA RURALIS*. (*To the Divine Glory of the Country.*) A more appropriate inscription could not have been chosen for so sublime a scene, commanding as it does a complete panoramic view of the Midland Districts of England, circumscribed by the distant mountains of Wales. The poet Thomson has left us a memento of its magnificence in his "Seasons:"—

"Meantime you gain the height, from whose fair
brow
The bursting prospect spreads immense around;
And snatch'd o'er hill and dale, and wood, and
lawn,
And verdant field, and darkening heath between,
And villages embosom'd soilt in trees,
And spiry towns by surging columns mark'd
Of household smoke, your eye excursive roams—
To where the broken landscape, by degrees
Ascending, roughens into rigid hills;
O'er which the Cambrian mountains, like far
clouds
That skirt the blue horizon, dusky rise."

The divine glory of the country has engaged the attention of mankind from the

earliest ages. In the Garden of Eden our first parents received their existence, here for a long time they revelled in innocence and rural enjoyment, till the arch fiend prevailed upon them to eat of the forbidden fruit. Well might Adam, when gazing upon the beauties of Paradise, be led to exclaim in the language of Milton—

“These are thy glorious works, Parent of good,
Almighty! Thine this universal frame,
Thus wondrous fair; Thyself how wondrous then
Unspeakable, who sitt’st above these heavens
To us invisible, or dimly seen
In these thy lowest works; yet these declare
Thy goodness beyond thought, and power
divine.”

Kings and potentates have often preferred the quiet enjoyments of rural life to the grandeur of regal state. The beautiful Median queen of Nebuchadnezzar, when removed from her native hills to the plains of Babylon, could not reconcile herself to the change. To assuage her grief, her husband constructed that curious hanging garden on terraces which was accounted as one of the seven wonders of the world.

We are informed by Josephus, the Jewish historian, that King Solomon frequently retired to his garden at Ethlam, about six miles from Jerusalem; that in these visits the monarch was usually seated on a high and magnificent chariot, clothed in white and glistening raiment; and that nothing might be wanted to add to his princely state he was attended by his body guard of six thousand horsemen, selected for their noble stature, youth, and beauty. That the long and flowing hair of each horseman was sprinkled over with gold dust, which sparkled in the rays of the sun. Here, amid his groves, orchards, fish-pools, and fountains, the great king had an ample opportunity of studying the works of Nature; for he was equally conversant with the animal, vegetable, and mineral kingdoms. The majesty of Solomon far exceeded in pomp that of all other princes, yet our Blessed Redeemer bids us “Behold the lilies of the field, how they grow: they toil not, neither do they spin; and yet I say unto you, that Solomon, in all his glory, was not arrayed like one of these.”

The great Cyrus delighted in the study of flowers. “I have measured, dug, and planted, the large garden which I have at the Gate of Babylon,” said that prince, “and never, when my health permits, do I dine till I have laboured two hours in my garden.” A noble example truly!

The gardens of Alcinoüs have been immortalized by Homer in his *Odyssey*—

“Oft for these shades where Nature reigns alone,
Would great Alcinoüs quit his regal throne;

And mid these scenes, whose beauties could
inspire
The mighty father of the Grecian lyre;
Nor still the monarch, nor the muse they wrong,
But smile in Nature, as they bloom in song.”

The noble-minded Garibaldi, Dictator of Italy, after giving liberty to his beloved country, retired amid the plaudits of the world, to cultivate his small farm at Caprera.

Our gracious sovereign Queen Victoria, when weary with the affairs of state, and the pageantry of the court, retires for a season to her domestic home in the Isle of Wight, or seeks a still greater seclusion at Balmoral, amid the mountain solitudes of Scotland. The pleasure which her beloved consort, Prince Albert, takes in agricultural pursuits, and the enjoyments of a country life, is patent to all.

History gives us several instances of men who have with great reluctance left the occupation and quiet enjoyment of rural life, to ascend a throne, and rule over kingdoms. When Alexander the Great conferred the Sidonian kingdom on Abdolonymus, he left his lowly cottage with regret—

“Th’ ambassadors which the great Emperor sent,
To offer him a crown, with wonder found
The reverend gardener hoeing his ground.
Unwillingly, and slow, and discontent,
From his loved cottage to a throne he went;
And oft he stopt in his triumphant way,
And oft look’d back, and oft was heard to say,
Not without sighs, Alas! I there forsake
A happier kingdom than I go to take.”

Numa, who laid the foundation of the great Roman Empire, was with much difficulty persuaded to quit the country for the royal pomp of Rome.

The Emperor Dioclesian, preferred his garden to a throne—

“Methinks I see great Dioclesian walk
In the Salonian garden’s noble shade,
Which by his own imperial hands was made.
I see him smile, methinks, as he does talk
With the ambassadors, who come in vain
To entice him to a throne again.—
‘If I, my friends,’ said he, ‘should to you show
All the delights which in these gardens grow,
’Tis likelier far that you with me should stay,
Than ’tis that you should carry me away;
And trust me not, my friends, if, every day,
I walk not here with more delight,
Than ever, after the most happy fight,
In triumph to the capital I rode,
To thank the gods, and to be thought myself
almost a god.”

The great master minds of all ages have united their testimony in praise of the divine glory of the country. In the city we see only the works of man, but in the country the works of God. Cicero, who lived amongst all the pomp of Rome, acknowledges the pleasure he received from the sublime scenes of Nature. Pliny was never so happy as in the quietude of his

villa, Thuseum. Here he observes, in a letter to a friend, "I enjoy the most profound retirement—all is calm and composed; circumstances which contribute no less than its clear and unclouded sky, to that health of body and cheerfulness of mind, which in this place I so particularly enjoy." Tibullus was a sincere and ardent lover of the country; and being disgusted with the corruptions of the times, he retired to Pedum, there to indulge in the occupations of a country life. Scipio retired from the malicious persecution of his enemies, to philosophic ease and independence at his villa of Liternum. Tasso and Ariosto were both equal admirers of fine landscape. Petrarch enjoyed the greatest rural delights in his hermitage at Vancluse. Martial was never happier than when enjoying the delights of his favourite Auxur, situated amid craggy rocks. Ovid was fond of writing in his garden; Linnæus studied in a bower; Buffon in his summer-house. "Of all my works," says Pope, "I am most proud of my garden."

Some men have carried their affections so far, as to desire that their mortal remains may repose in those seclusions which they so ardently loved during their lifetime. Plato was buried in his favourite grove of Academus. Rousseau requested that his mortal remains may rest in his retreat at Ermonville. Baskerville, one of the

founders of the fancy trades of Birmingham, was, according to his will, interred in his garden. Sir William Temple gave orders for his heart to be inclosed in a silver casket and placed under a sun-dial in his garden. And the Duchess of Kent is to have her final earthly rest at Frogmore.

Poets of all ages have depicted in glowing strains the beauties of Nature. How ardently have they expressed their feelings in praise of rural life! Divina Gloria Ruralis seems to be the theme on which they delighted to dwell. Well might the poet Thomson exclaim—

"Oh! knew he but his happiness, of men,
The happiest he! who, far from public rage,
Deep in the vale, with a choice few retired,
Drinks the pure pleasure of the rural life."

Is there a soul that acknowledges and adores an Almighty Creator? is there a mind that delights in the pleasing pursuits of literature, the refinements of art, the wonders of science, or the calm consolations of religion, but will respond to the ejaculation of Cowley—

"Nor e'er by me shall you—
You of all names the sweetest and the best—
You muses, books, and liberty, and rest,
You fountains, fields, and floods, forsaken be
As long as life itself forsakes not me."

WILLIAM HARRIS.

*Swiss Cottage,
Birchfield, Birmingham.*

OLD AND NEW ANNUALS.

GROWN FOR TRIAL AT CRISWICK, 1860.

GYPSOPHILA MURALIS (Carter).—A slender, branched, diffuse plant, forming a mass about one foot in diameter, long linear leaves, pale pinkish flowers. A neat plant for rock-work, but ineffective as a mass.

HELICHRYSUM BRACTEATUM INCURVUM (Turner, Thompson, Carter).—Five improved varieties were grown, namely, *nanum ferrugineum*, *compactum maximum*, *compositum maximum*, *macranthum compositum maximum*, *macranthum nanum*. A beautiful race of everlasting flowers, the flowers large, incurved, very various in colour, height averaging three feet, flower-heads two inches in diameter. Not very fixed in character, but sportive. *Bracteatum nanum* is dwarfier in habit, the height being fifteen to eighteen inches.

HIBISCUS HISPIDUS and *TRIONUM* (Veitch, Carter, Parker).—The first a handsome large-flowered species, flowers cream coloured with intense black spots at the base of the petals. The second is like it but

smaller flowers; it is the Bladder *Ketmia* of old gardening books.

IBERIS UMBELLATA ATROPURPUREA (Carter).—Same habit as common candytuft, flowers a rich deep rosy purple. Selected plants of this are of the first class among annuals.

LEPTOSIPHON HYBRIDUS (Vilmorin).—Compact habit, four inches high, flowers distinct in their colours, some rosy lilac, others coppery red, some buff. At present this hybrid is too mixed to be of much service, but if the brighter coloured forms can be perpetuated, they will be acceptable additions to a very ornamental genus.

LOBELIA BICOLOR (syn., *Erinus gracilis*, *E. oculata*, *E. oculata alba*, *E. maxima*, *E. compacta*, *E. grandiflora*, *E. ramosoides*, *crinoides*, *complanata*, *arguta*; Carter, Thompson, Van Houtte, Veitch).—The report says: "This is the pale blue *lobelia* so extensively cultivated under the name of *gracilis*, to which species it has very slight resem-

blance. This sort was distinguishable from the rest by its diffuse habit and pale coloured flowers, and is of no importance in decorative gardening."

LOBELIA BICOLOR ROSA (syn., *L. gracilis rosea*, *L. erinus Lindleyana*, *L. Lindleyana*—Thompson, Van Houtte).—The habit of bicolor, but the flowers of a rosy lilac. Adapted either for beds or pot-culture.

LOBELIA ERINUS (syn., *L. densa multiflora*—Veitch).—The genuine form has long since disappeared, having been modified by seeding and admixture. Flowers small, deep blue, white eye, of little value as a decorative plant.

LOBELIA ERINUS COMPACTA (syn., *L. gracilis erecta*, *L. gracilis compacta*—Thompson, Carter).—Dwarf, slender, compact, dense habit of growth, with crowded stems, forming a cushion-like tuft; lower leaves obovate; flowers pale blue. Useful for small pots and edgings to very small beds.

LOBELIA ERINUS SPECIOSA (syn., *L. speciosa*, *Crystal Palace Lobelia*—Carter, Turner, and generally distributed).—The best for flower-garden purposes of all the dwarf lobelias collected. Habit neat and compact, flowers large and deep blue, varying slightly when from seed. The best forms should be perpetuated by means of cuttings to secure uniformity. The best form is that known as the *Crystal Palace Lobelia*, the flowers of which are of the deepest blue, with a white eye. The others contributed under the name of *speciosa* agreed with it in all points except the tips of the branches; in the *Crystal Palace* variety these are brownish, in *speciosa* they are green, and the flowers of a lighter shade of blue.

LOBELIA RAMOSA (syn., *L. formosa*—Veitch, Carter).—Very handsome, but better adapted for pot culture than for the open air. Erect, openly branched, lower leaves pinnatisect, upper ones linear lanceolate; flowers bright deep blue, larger than any of the foregoing, and remarkable for the dimidiate or halved appearance of the lateral lobes of the lower lip.

LOBELIA TRIQUETRA (Thompson).—Unattractive.

LUPINUS DUNNETTI SUPERBUS (Veitch).—Showy and effective, with the habit of *L. hybridus*, but light coloured and nearly smooth branches. Flowers at first white, changing to lilac, the standard deep purple. Plant dwarfish in habit, spikes freely produced.

LUPINUS HARTWEGII ALBUS (Veitch).—Handsome racemes of white flowers. An excellent border plant.

LUPINUS HARTWEGII CELESTINUS (Veitch).—Pale or grayish blue, and like the last, showy and effective.

LUPINUS HYBRIDUS INSIGNIS (Veitch).—Dwarf habit, fine central spike of deep purplish lilac flowers.

LUPINUS MENZIESII (syn., *L. sulphureus*—Vilmorin).—Dwarf tree-like habit, producing, at about a foot from the ground, a whorl of spreading branches; these bore pedunculated spikes of handsome pale yellow flowers.

LUPINUS MUTABILIS VARICOLOR (Carter).—A sportive form of *L. mutabilis*, various in colour. Tall branching habit, flowers in short racemes of different shades of blue with a darker standard, or white with a purplish standard.

LUPINUS NANUS LILACINUS (syn., *L. subramosus*—Van Houtte).—Dwarf, spreading, compact, numerous racemes of deep blue flowers, the standard marked with a white spot. Very showy.

LUPINUS TRICOLOR ELEGANS (Veitch).—Branched and spreading, two and a-half feet high, numerous racemes of white flowers, the standards deep lilac, changing to puce-purple. Very effective.

LYCHNIS HAAGEANA (Benary, Carter).—Did not succeed well in the open ground, through adverse conditions of the soil. A foot high, unbranched, bearing a few flowers in succession on the upper part of the stems. Flowers various in colour, including vivid scarlet, orange scarlet, crimson of several shades and white. In pots of good soil the plants were taller, and those with bright scarlet flowers very handsome, the flowers were two to two and a-half inches in diameter.

NYCTERINIA SELAGINOIDES (Veitch).—Dwarf compact tufts furnished with oblong spatulate leaves. Flowers in terminal corymbs, star shaped, white or lilac with orange centre. A pretty dwarf plant for rock-work.

ENOTHERA BISTORTA VEITCHIANA (Veitch).—A showy yellow flowered annual, irregular in growth. Flowers solitary from the leaf axils, abundant, about one inch in diameter; four petaled, with a small crimson spot at the base of each petal. Rather straggling.

ENOTHERA DRUMMONDII NANA (Carter, Vilmorin, Truffaut).—Diffuse in growth, over a foot in height, some rising to a foot and a-half; flowers large, pale yellow and showy. Considered a good bold-flowered dwarfish plant for the front of shrubbery borders.

ENOTHERA SALICIFOLIA (syn., *E. bienis hirsutissima*, *E. versicolor*—Carter).—Plants coarse and weedy, flowers dingy.

PAPAYER SOMNIFERUM MONSTROSUM (Van Houtte).—A curious plant of tall growth, large dull purplish-black spotted flowers. The flower-heads produce a number of small ovaries around the base of the principal one, after the manner of the hen and chicken daisy.

PHACELIA TANACETIFOLIA ALBA (Vilmorin).—Grayish white flower, weedy character.

PORTULACA.—*P. Thellasonii* and *P. splendens* were the only two that produced flowers of rich and decided colour.

PYRETHRUM PARTHENIUM EXIMUM, (syn., *Matricaria eximia*—Turner).—A fine late flowering double quilled feverfew, free, compact habit, one and a-half to two feet high; flowers pure white, very numerous, and excellent in a mass.

SCRIZANTHUS CHILENSIS (Veitch).—Two feet high, flowers deep lilac dotted with black; an inferior sort.

SCRIZANTHUS GRANDIFLORUS OCLATUS (Van Houtte).—A handsome form of *S. pinnatus*, height one and a-half foot, branching, leaves pinnate; flowers bright rosy lilac, upper lip heavily tipped with rose and having a large black central spot, lower tip rosy; very showy.

SPRAGUEA UMBELLATA (Veitch).—A dwarf succulent-looking herb, with a rosulate tuft of spatulate leaves, and numerous scapes supporting the umbellate heads of rosy flowers which issued from among crowded whitish or scarious bracts; neat and pretty, and adapted for rock-work.

TAGETES PATULA AURANTIACA (Carter).—The true plants of this marigold were very gay, and intermediate between the French and African races; flower-heads clear light orange, and two and a-half inches in diameter. Not so dwarf as usually described.

TAGETES PATULA NANISSIMA (syn., new miniature French marigold — Carter,

Veitch).—Dwarf, early flowering, flowers mostly dark orange brown, suitable for margins.

TROPEOLUM TOM THUMB (Carter).—Compact growing, bright orange scarlet well adapted for beds and pots.

TROPEOLUM YELLOW TOM THUMB.—Flowers clear yellow; very showy as a pot plant. "These two varieties were decidedly the best of the kinds belonging to the common *Nasturtium* series."

VERONICA SYRIACA (Thompson).—Early in flower and out of bloom by the end of June. Dwarf, neat, compact, pretty when in lines or masses; plants three to four inches high; abundant small starry flowers, blue and white.

VISCARIA CÆLI ROSA NANA (Carter).—Growth twelve to fifteen inches high; flowers rose-colour with paler centre, very pretty, soon out of flower.

VISCARIA CÆLI ROSA ALBA (syn., *Agrostemma cœli rosa alba*, A. New White).—Diffusely branched habit; flowers white, straggling, and ineffective.

VISCARIA OCLATA VAR. SPLENDIDA (syn., *Agrostemma cœli rosa* — Vilmorin).—A large-flowered and highly-coloured variety of *oculata*: flowers rich rose-colour, remarkably brilliant.

VISCARIA OCLATA NANA (Carter).—A first-class annual, dwarf, compact and uniform; plants about fifteen inches high; flowers lively rose with deep crimson eye, full and circular.

VISCARIA OCLATA DUNNETTI (syn. *V. Dunnettii*—Parker, Vilmorin, Truffaut).—A pale bluish-coloured variety of *V. oculata*, too indistinct for decorative purposes, but pretty in a border of annual flowers.

VISCARIA OCLATA BURRIGDI (Parker).—Large flowered; flowers pale slate or bluish lilac, almost white; not distinct enough for masses, but a good border annual.

RIVERS'S ROSE AMATEURS' GUIDE.

THE seventh edition of Mr. Rivers's *Rose Amateurs' Guide* (Longmans) contains some additional hints on the culture of the rose for various purposes, and a quite new idea for converting climbing roses into picturesque objects, as lasting in their beauty as the best of the hybrid perpetuals, by, in fact, working perpetuals on them. Amateurs who are now planting roses from store pots, cannot do better than give the suggestion we quote below a little consideration; and shape their plans accordingly. Instead of a gay show for a few weeks on walls and

arches, the show may be kept up all the summer long on Mr. Rivers's plan, which, with some instructions on the management of standard sempervirens, we here subjoin as preferable to wasting a line in praise of a book which does not want it.

CULTURE OF EVERGREEN ROSES.

"The varieties of *Rosa sempervirens* are of the easiest culture, as they seem to flourish in all soils and situations. In sheltered places and under trees they are nearly evergreen, retaining their leaves till

spring. This makes them valuable for covering banks, trees, or walls. I know of no rose idea prettier than that of a wilderness of evergreen roses, the varieties planted promiscuously, and suffered to cover the surface of the ground with their entangled shoots. To effect this, the ground should be dug, manured, and thoroughly cleaned from perennial weeds, such as couch grass, etc., and the plants planted from three to five feet asunder. If the soil be rich, the latter distance will do; they must be hoed amongst, and kept clean from weeds after planting, till the branches meet; they will then soon form a beautiful mass of foliage and flowers covering the soil too densely for weeds of minor growth to flourish. Those weeds that are more robust should be pulled out occasionally; and this is all the culture they will require: for temples, columns, wire fences, which they soon cover with beauty, and verandahs, their use is now becoming well known. One of the most complete temples of roses is that at the seat of—Warner, Esq., Hoddesdon, Hertfordshire; and the prettiest specimens of festooning these roses from one column to another, by means of small iron chains (strong iron wire will do), may be seen at Broxbourn Bury, near Hoddesdon, the seat of—Bosanquet, Esq. They also form elegant and graceful standards; like the Ayrshire roses, their shoots are pendulous, and soon hide the stem, in a few years forming a pretty dome of foliage and flowers; for covering the naked stems of forest or ornamental trees they are also very useful, as their roots will not injure the tree which supports them; and if strong copper wire is brought loosely round the trunk of the tree to support their branches, they will give scarcely any trouble in such situations. To make them grow vigorously, give them a supply of manure on the surface annually, in the autumn, to be carried to their roots by the rains of winter. Like the Ayrshires, standard sempervirens roses literally require no pruning. I have them as standards, as pillars, and as masses of underwood; the dead spray is cut out, and no other pruning done; for the wild beauty of standards is entirely destroyed by it; occasionally a very long shoot will have to be shortened, and that is all.

“About six or eight years ago I received, among others, some very stout short stocks of the dog rose; they were not more than two feet in height, but stouter than a large broom-handle, the bark thick and gray with age: they were planted and grew most luxuriantly. I was for some little time at a loss what varieties to bud them with; for, be it remembered, all stout and old rose

stocks required to be worked with very strong-growing sorts of roses, to take off the abundance of sap, and keep them in a healthy state. At last, in a mere freak of fancy, I had them budded with some varieties of the evergreen Rosa (*Rosa sempervirens*). They grew most luxuriantly; and, after a year or two, not being trees adapted for sale, they were planted in a sloping bank of strong white clay, and left to grow and bloom as Nature dictated—not a shoot was ever touched with the pruning-knife.

“One of these trees, now a well known variety, the *Félicité Perpétue*, is on a stem a trifle more than two feet in height, and it has been these two or three summers past a picture of beauty. When in full bloom the ends of its shoots rest on the ground, and it then forms a perfect dome of roses; nothing in rose-culture can really be more beautiful. It will be seen at once with what facility such stout, short, old rose stocks can be found in any hedge; they may be planted in the kitchen garden, budded with the above-mentioned sort, and, to give variety in colour, with some of the following kinds, all varieties of *Rosa sempervirens*, *Myriantes*, *Jannâtre*, *Adélaïde d'Orleans*, and *Spectabilis*. Every bud will succeed, as no roses grow more freely: and after remaining one season from budding in their ‘nursery,’ some nice places must be found for them on the lawn, where, unpruned, unchecked, they will, with all the freshness of unassisted nature, annually delight the eye of the lover of flowers—those beautiful gifts of an ever beneficent Creator; and may I not add, that the contemplative mind will see in these lovely pendant roses the great charms of humility and gratitude—they seek to ‘abase’ themselves, and their beauty is ‘exalted;’ they receive from the earth all their benefits, and endeavour to cover and adorn her with their luxuriance.”

DECORATED CLIMBING ROSES.

“A strange term, for can a rose tree be decorated? Yes, and I must at once tell how it has been done with these evergreen roses—the most vigorous and the most tractable of rose stocks—and how it may be easily practised.

“A few years since, a friend, living at Weyliffe, near Guildford, found the heavily built brick bridge leading over the railway to his house (this is, however, in his grounds, so as to be private), conspicuously ugly, and he wished it to be hidden by evergreen climbing plants. As the carriage-road ran over the bridge, the gravel, of which it was made, did not seem to offer very happy quarters for any plant but ivy,

which was objected to as being too heavy. I then proposed planting it with varieties of *Rosa sempervirens*, or, as we ought always to call them, evergreen roses. They were with some difficulty planted, the gravel being loosened with the pick, and some manure mixed with it. In my annual visits to my friends living in this charming district—for no part of England is more so—I watched with some interest my bridge-roses. They grew with great rapidity, and soon covered every brick, but when they bloomed in large beautiful masses, some disappointment was expressed at the monotony of colour. I was prepared for this, and told my friend that they must be decorated. A good-natured incredulous smile met me with 'how?' I called the gardener, for this was in July, the budding season, went with him to the rose garden, and thence took buds of some of the most beautiful of the dark hybrid perpetual roses, not forgetting some of the bright rose-coloured tints, such as Colonel de Rougemont, La Reine, General Simpson, and some others. Our great 'horse' was, I remember, General Jacqueminot. My budding hand had not forgotten its cunning, for did I not consider myself at twenty as the most dexterous and rapid budder of roses that ever lived and was likely to live? So I and the gardener proceeded to place buds here and there in shoots favourable for the purpose. The day was warm and the thorns much sharper than they used to be forty years ago, so I have a misty idea that my friend Jackman the gardener put many more buds in than I did. To use the common phrase, nearly all the buds 'took,' i.e., lived, and many of them put forth fine clusters of bloom the following August and September. I paid my annual visit to my friend in June of the next year, just eleven months after my budding exploit. As I approached the bridge I felt full of interest about my buds. What a glorious sight met my eye! Amid the masses of flowers of the pale climbing roses shone forth large clusters of the Geant, General Jacqueminot, Triomphe des Beaux Arts, Prince Noir, Comte Bobinsky, Louise Peyronny, Colonel de Rougemont, Jules Margottin, and others; the bridge was a fairy avenue so charming was the effect.

"I have a full and fervent belief that ere long, banks and avenues of decorated roses will be in every rose garden, and that their culture will be carried to an extent we at present scarcely dream of. I have one rose friend who has formed his rose walk with network of iron wire, fastened to upright iron rods; the meshes formed by crossing the wire occasionally, are twelve or fifteen

inches in diameter, so as effectually to support the shoots of the climbing roses.

"This walk, in the course of a year or two, will be between two upright walls of 'decorated roses,' and I can scarcely imagine anything in rose culture more beautiful. It must be borne in mind that no arches, unless some fifteen feet apart, and no arched coverings must be placed over a rose walk or avenue of this description, for the finer kinds of roses require all the light and air they can have.

"For pillars, banks, coverings for walks, and every fancy that can enter into the mind of a rose lover, these budded climbing roses are adapted, and they will well reward the ingenuity of a clever rose gardener; in many cases superseding the use of standards, which are for a great portion of the year so very ugly.

"The 'how to do' these roses is very simple. If very rapid growth be required, the place in which they are to be planted should be well stirred to a depth of two feet, some manure mixed with the earth, and climbing roses of such sorts as *Félicité*, *Princesse Louise*, *Princesse Marie*, and *Spectabile* (all varieties of *Rosa sempervirens*), should be planted in November; if they have strong shoots, they may be tied or fastened up to nearly their full length; if not with long and strong shoots they may be cut down to within five inches of their bases: they will in the following season make shoots from ten to twelve or fifteen feet in length. The first shoots that will be fit to bud will be the old shoots that were left at full length when they were planted; these may be budded in June, and the young shoots that are made during the whole of the summer may be budded weekly till the end of September; the position of each bud must be thought of so as to make a picture really artistic and beautiful. As soon as a bud is inserted, or if two or three buds are placed in the same shoot, the end of the shoot must be cut off to within two buds of the topmost inserted bud; the buds may be untied about three weeks after insertion, and all the young shoots that break out *below* the inserted buds must be rubbed off; this is all that need be done the first season. The next season the buds will bloom abundantly, and it will only be necessary to destroy all the young shoots that break out of the budded branch below the buds; those shoots that break out above the inserted buds may be pinched in frequently, the budded branch will not then become rigid and starved like the stem of a standard rose.

"In decorating climbing roses the buds should be dotted over the whole surface of the plant, two or three buds in one branch

will be found enough, and care must be taken not to bud every branch of the climbing rose; some must be left to grow in their natural, graceful, vigorous manner, so that the decorated wall or walk has not a stumpy appearance like an avenue of standard roses.

“Evergreen roses, trained to tall pillars or suffered to hang in festoons, are capable of most fanciful decoration, as buds of very choice kinds may be inserted at different points of view so as to have a charming effect.”

PINE GROWING FOR AMATEURS.

In the section of pine pit which accompanied the former part of this article, an oversight occurred. Two four-inch pipes should have been shown in front of the pit, for affording the requisite amount of heat to the atmosphere; the upper pipe of the two should also be shown with vapour-troughs cast upon it, for the purpose of counteracting the drying effect of the pipes; these troughs should always be supplied with water as often as they become empty by evaporation, as the pine only flourishes in a humid atmosphere; the contrary state produces an enfeebled plant, which, in a dry air, becomes a prey to scale-bug, and all the vermin that the pine is subject to.

The bed having been prepared as already directed, procure sufficient fruiting plants for one row; the second row may be planted with strong successions. This arrangement will give a better succession of fruit than would be the case were all the plants fruiters at the time of planting; as, if planting take place in spring, fruiting plants will start immediately, and if consisting of two or three sorts, will furnish a succession of fruit during the autumn, whilst the successions will be getting very strong for showing fruit early in the following spring; and at that time the suckers on the first-named row, will be progressing to follow up the succession. When any fruit are cut, the lower leaves must be removed from the old stem; it should then be earthed up with the prepared compost, a little above the base of the suckers, the latter having been reduced to two on each plant, as it is not desirable that more than that number be left, unless the third be a ground sucker, that will sometimes show itself from below the soil; these will, if left, reproduce, as it were, the original plant, the old stock being entirely cleared away after the fruits are cut, leaving the ground sucker as a maiden plant. Any crowns or suckers that are taken off, may be placed to nurse in the front row.

I would advise the amateur not to get home his plants until he is quite satisfied all is in readiness for planting; for though the pine does not immediately flag and show an injury received so soon as some other

plants, still its roots are very soon destroyed, and it takes time for the plant to replace them. When they arrive, they will be closely tied up with matting, and should not be released until after planting, as that operation cannot be accomplished in the case of large plants with their leaves loose. If the bed is six feet wide, place the succession plants in a row, two feet and a-half from the front wall, and at two feet from plant to plant in the row; then put the fruiting plants in a row, two feet from the former, and at the same distance apart as the others; and, as the soil should not be trodden upon, have a piece of board to stand upon during the operation; and having opened a spacious hole, turn the plant carefully out of the pot, and if the roots are matted together at the bottom of the ball take a pointed stick, and with care, disentangle some of the principal ones and spread them in the hole, shaking the soil between them with a little hand-fork; and if any of the lower leaves are yellow, or injured, a few may be pulled away that the stem of the plant may be covered with earth, which will facilitate the emission of roots therefrom. When all are planted, a watering sufficient to settle the soil about them may be given, with water at 90°; and, as the soil of the bed will not for some time be much occupied by their roots, the waterings may be moderate and confined to the immediate vicinity of the plants for the first few weeks; after which a general watering all over the bed may be given, and again repeated at intervals, according to its state, which must be ascertained by turning up some of the soil, or keeping a stick thrust into it, which can be drawn out and examined, and will indicate both the state of heat and of moisture. The water that is used should always be made quite as warm as the soil in the bed, which is easily done by the addition of boiling water; and when the plants have become established, a little soot-water, or liquid manure, made from cow or sheep dung, may be added to the ordinary water; say a peck of soot and the same quantity of dung put into a half-barrel tub, and upon that a can or two of hot water to draw out

the strength of the dung, and an hour or two later, the tub filled up with soft water and allowed to stand a day or two to settle, when a scum will rise on the top; this may be removed with a wire sieve or some other contrivance which will leave a clear liquid stimulant; which, if not used in excess, will not injure any plant to which liquid manure may at all be given. But I would say, beware of using guano or other artificial manures of a hot nature. The plants planted and watered, the bandages may be removed and the leaves placed in their natural position, and if the weather is bright a shading of tiffany or thin mats may be put on the pit, and a light syringing with warm water given all over the plants and walls just before the sun falls upon the glass in the morning, and again early in the afternoon before it quite leaves it. Air must be attended to if the weather is warm; but this should at first, or until the plants are somewhat established, be obviated as much as possible by shading and keeping the fire low; if it is seen in the morning that the day is likely to be bright and warm, the valve may also be turned, and the flow of water cut off from the four-inch pipes that heat the atmosphere, and be made to circulate only in the bottom-heat pipes. Indeed, at all times this is a point that should be attended to, for it is useless waste to consume fuel to heat the air and then have to throw open the house to prevent things being scorched. As soon as the sun breaks upon the glass, as soon as it can be seen that the day is likely to be bright, the fire should be damped by shutting in the damper; and unless it is required for bottom-heat, no fresh fuel should be added; but as bottom-heat must be cared for in warm as well as in cold weather, it will sometimes be found necessary to maintain a slow fire on purpose; and having thrown out this caution against firing too late in the morning, let me caution against being too remiss in the afternoon. I like the fire to be lighted early, so that the heat from the pipes just begins to tell upon the atmosphere as the sun's rays begin to fail, and thus keep up, as it were, a lengthened day; for if the sun-heat begins to decline very perceptibly before the fire is lighted, it will only be regained when daylight is so far declined as to cause it to be injurious rather than beneficial to the plants; heat with light is the principle to be acted upon in pine growing, in order to produce sturdy, well-conditioned plants, capable of throwing up well-formed fruit; but heat with darkness will rather tend to the contrary end, from which fact, my readers will understand why a lower tem-

perature is recommended during the night than during the day; also, why they may not, with impunity, use a high temperature in winter. But there are some exceptions to the last rule; that is, when a bright day happens even in winter, as it will occasionally, a rise of a few degrees above the ordinary temperature will then do good, and should be taken advantage of, but I never attempt by fire-heat alone, unaided by the sun, to raise the heat much above the minimum; and this may be fixed for winter at from 58° to 62° by night, and from 65° to 68° by day; but with sun-heat, 75° to 80°. As the spring advances, a proportionate advance may be allowed in the temperature both night and day, until 65° to 70° is reached by night, and 80° to 90°, or in the afternoon 95° may be attained by day, in the summer months, as the bottom-heat will vary much less than that of the atmosphere, and may be kept steadily at about 75° in winter, to be raised to 80° in spring, as soon as active growth commences, and may advance as high as 85° without doing injury, beyond which it should not go. Syringing, both over the plants and between the stems must be attended to generally once a-day in winter, unless the weather is very dull, and twice or three times a-day in summer. The bed will require a thorough watering occasionally besides the syringing, as have already been explained. Air must be attended to, and given early in the day, and continued on so long as is necessary to keep the temperature to the proper point, but not so long but that the sun may raise it 5° after it is shut. I am a great advocate for airing early in the day, and likewise closing early; the first prevents the flagging of foliage, the latter prevents a cold stagnant air during the night.

If sufficient air is given, shading will only be necessary during very hot and bright weather, or after replanting, before the plants have re-established themselves; then only for two or three hours, from eleven o'clock, A. M., and should consist of a very thin material, such as tiffany; this may be tacked on light frames for the greater convenience of removal. These frames, so covered, may be made useful for other purposes, such as protecting fruit blossoms in spring, or covering bedding plants by night, when set out to harden. Night covering, where it can be applied not only saves fuel by rendering less fire-heat necessary, but preserves the internal atmosphere in a more congenial state, from intercepting the escape of the moisture through the laps of the glass.

H. HOWLETT.

INFLUENCE OF THE SEASON ON THE INSECT WORLD.

THE autumn and winter of last year had a very deleterious effect on the insects of almost every genus. For, where thousands of moths and butterflies were seen flitting about by day and night in 1859, scarcely a specimen was to be met with last season. The abundance of heavy rain destroyed the pupæ of many insects, whether exposed to the damp, chilly atmosphere, or buried far beneath the surface of the earth. Birds suffered from the deficiency of their favourite food, and resorted freely to grain and fruit as substitutes.

The winter moths, so destructive to the apple and plum orchards in many localities in 1859, confined themselves to very narrow circles last year; and, consequently, the devastations which follow their track—to the destruction of whole orchards—was precluded by the scantiness of their numbers.

That fine but common insect, the privet

hawkmoth, must have suffered severely in its pupa state last winter, as very few caterpillars were to be met with in the following autumn. There is a remarkable circumstance connected with the hibernal repose of the chrysalis of this insect. It has been known to remain dormant for two and even three years, and then make its appearance in July or August, as full of life and vigour as if it had only slept its usual winter's sleep.

This singularity in the metamorphosis of the privet hawkmoth is nothing more than a provision of Nature to preserve the species intact; for should the season be so wet as to prove destructive to the perfect insect, as it often happens before they lay their eggs, then the chrysalids that had taken their extra sleep, come forth in the following year to supply the vacancy, and thereby perpetuate their species.

MICHAEL WESTCOTT.

NOTES ON NEW PLANTS SUITABLE FOR COOL HOUSES.

GREVILLEA ALPESTRIS.—The Grevilleas are an interesting genus of New Holland plants, belonging to the order Proteads.

They are all suitable for cool greenhouses, not requiring a temperature above 40° during winter, and in general treatment assim-

ilating with the various evergreen shrubs from the same locality. They may be raised from seed without difficulty, but cuttings of ripe young shoots are preferable, as they root readily in sandy peat under a bell-glass, if encouraged with bottom-heat as soon as callused. *Rosmarinifolia*, and *acuminata* are nearly hardy. *G. alpestris* is a plant of elegant growth, rather pendant, and naturally taking the form of an ostrich plume, if not trained to upright sticks. The leaves are oblong, ovate, apparently sessile; the flowers are borne on the whole length of the ripe wood, with a large terminal cluster, the weight of which causes the shoots to assume a pendant form. In general appearance it resembles a miniature honeysuckle, and the colours of the flowers are lively brick red and canary yellow. [Price 3s. 6d. Generally in the trade.]



GREVILLEA ALPESTRIS.

EPACRIS MINIATA VAR. *SPLENDENS*.—This is a beautiful hybrid of *E. miniata*. The flowers crowd the stem profusely, and have a charming appearance, owing to the vivid crimson of the tube, and pure white of the toothed limb. Requires the usual treatment of *Erica* and *Epacris*, and has a comparatively hardy constitution. [Price 2s. 6d. Generally in the trade.]

VACCINIUM SERPENS.—This is a valuable acquisition, and will be found especially useful to decorate rockeries in conservatories, or to grow on blocks in fern-houses where but little heat is used. It was discovered by Griffith in Bhotan, and by Dr. Thomson and Hooker in Sikkim; it inhabits both the tropical and temperate zones of the Himalayas, particularly selecting humid places among rocks, where a peaty soil has



EPACRIS MINIATA, VAR. *SPLENDENS*.



VACCINIUM SERPENS.

been formed, or parasitic on the branches of large trees. It has a profuse and rich myrtle-like foliage; the flowers are of the typical form, very large, colour rich crimson, the tube swelling slightly midway of its length. The immature flowers are yellow with crimson stripes, deepening to full crimson as they attain their full size. The best place for it is among rockwork; if grown in a pot it must have the support of a branch of a tree, as its habit is sprawling and procumbent; or it may be planted in a

hollow in an old tree stump, where it will have room to spread, and support in every direction for its branches. In any case the

soil should consist of rotten wood and gritty peat, or rotten wood and leaf-mould thoroughly decomposed.

CULTIVATION OF THE CHOROZEMA.

This is one of the most beautiful and interesting of the New Holland genera, beautiful as many of them are, and being all of them worth the cultivator's attention. The soil which I should recommend for this tribe of plants to be grown in, should be two parts turfy peat, one part light loam, and one part sand, with a little well rotted manure. The whole should be well mixed together, and cut with the spade, but should not by any means be sifted, as sifting, in my opinion, destroys the most valuable portions of the soil; and instead of the soil being porous, as it ought to be, it is rendered small and close. The more open the soil, the firmer will the plants grow, and the longer they will continue to grow with vigour; so that the stronger the fibre, and the more that is in the soil, the better for the health of the plants. In Nature there is no such thing as sifted soils; for whenever we find the soil close and imporous, we never find the plants in a healthy condition; but when the soil is light and porous, we find the plants always healthy and strong. To those who wish to grow fine plants, I should recommend wide and shallow pots, as plants of this sort never go deep into the soil, especially if they can have plenty of surface room to run in. Many plants of this tribe are often lost by having too great a depth of soil; they extend their roots as well as they do their branches. The plants when they have plenty of surface room for their roots, are generally low and bushy; but when they are short of surface room for roots, they are weak and spindling, and almost destitute of leaves or branches. When potting, a few large potsherds should be laid at the bottom; and over them should be laid some turfy peat or the roots of the common fern, as it will form excellent drainage, and also prevent the soil from getting among the potsherds; and the roots at the same time would have to run amongst the loose pots or drainage. Great care should be taken in watering, especially in the autumn and winter, as the plants are then done growing, and the roots are in a state of repose. If much water is given at that time, the roots will rot, and the plants will become sickly, and very often go off; and if they live, after the points of the roots are rotted off, it will be a long time before they recover themselves. I should therefore advise those who have the care of

plants of this description, to be careful how they use the water-pot in the autumn and winter; but in the spring and summer they may have plenty of water. If the plants are well drained, I should never advise any person to turn them out of doors, but to keep them in the house or pits, and give plenty of air night and day if the weather is mild; for if they are turned out of doors they often get scorched with the sun or drenched with the rain, which are both very destructive of the health of plants.

The best time to propagate this genus of plants is in the spring and summer, that is when the young shoots have made about four or five leaves, or rather joints, that is, of the large leaved species; those shoots destined for cuttings should be slipped off with the finger and thumb, as that brings the lower joint along with the cutting. Any bark that adheres to the cutting from the old wood should be taken off with a sharp knife; and the little knob which forms the end of the cutting, will form the roots when the cutting is put in the pot. With regard to the small-leaved, or rather leath-leaved species, the cutting should be taken off when the young wood is about an inch and a-half long; they should be taken off in the same manner as is recommended for the larger leaved species. In the pot in which the cuttings are to be put, at the bottom should be placed some potsherds, and over them should be some turfy peat or moss, to prevent the sand from getting amongst the potsherds. The pot then should be filled up with very fine white sand, and gently watered, then pressed lightly down; and when it is firm and well settled down, the cuttings should be inserted. All round the edge of the pot should be left as much room as will admit of a bell-glass being put on. They should be gently watered overhead before the glass is put on; they then should be placed in a gentle bottom-heat, and the glasses dried every morning so as to prevent any damp lying about the plant. A little water should be given to them when they want it; great care should be taken with the shading of them, for if the sun touch them they will not recover it soon; the cuttings will strike in a short time, and when they are well rooted they should be potted off immediately into thumb-pots,

and shifted as often as they require it, so that the plants never become stunted. If care be bestowed upon this genus, it will repay the little trouble that is taken with it by a fine show of flowers. Where this tribe of plants is grown, as little fire as possible should be used, as they do not like artificial heat; but they would frequently do much better if they were kept dry and without fire for the most part of winter, and only a little used when the frost was severe. They are pretty hardy when kept rather dry; it is when the soil is wet that the frost hurts them; therefore, when they want water it is better to give them water early in the day, so that it may be dried off by night. In the spring, when the plants begin to grow, the house or pit in which they are grown should be kept rather close and warm, that they may get a good start, and that they may be enabled to make their growth as early as possible, so that their wood may be well ripened before winter. When the wood is well ripened in the autumn, a good show of flowers may be depended upon the following spring and summer. That the plant may be kept in good health, and without much fire-heat, or rather without any, the water used for watering should be as near the temperature of the house in which they are grown as possible, or rather above than below it; for if they are watered with very cold water it is apt to chill the roots, and give a check to the plants, which they will not easily recover.

The species belonging to this genus are not very numerous, but all very beautiful, and well worth the greatest care and attention that can be given to them. I shall therefore enumerate all the species that I am acquainted with, which I think will be valuable to some if not to others.

Chorozema cordatu (cordate leaved).—This is a beautiful species when well grown. The leaves are heart-shaped, of a dark green, and show spinous teeth all round the edge; the stems are very weak and slender, and the flower-spike is somewhat pendant, and proceeds from the apex of the shoots. The colour of the vexillum is bright orange, with a little yellow and red in the centre. The ala, or wings, are maroon, and deflexed, or bent downward. The corona or keel is very small, and straw-coloured, and tipped with red. The calyx has five teeth, and much shorter than the corolla, and somewhat spreading. A native of Swan River, introduced in 1836.

Chorozema varium.—The vexillum of this species varies in colour from a light orange to a straw-colour. The wings are nearly of the same colour as the last

species, but are much smaller and lie close together; not so in the last species, the wings spread very much. The vexillum of this species is more bifid at the upper edge than in cordata. The teeth of the calyx are more spreading, and somewhat bent back; the leaves are cordate and pubescent, which gives the whole plant a grayish appearance; the edge of the leaves has spinous teeth, which are somewhat bent back; the whole plant is more robust than the last species. A native of New Holland, introduced in 1836.

Chorozema ilicifolia.—This is another very pretty species, very nearly allied to cordata. A native of New Holland, introduced in 1803. The colour of the flower is scarlet.

Chorozema nana (dwarf, prickly).—This is a very curious little species, and very distinct; a native of New Holland, introduced in 1803. The colour of the flower is scarlet.

Chorozema Dicksonii.—The colour of the flower is scarlet and yellow; a very stiff-growing little species. This is a beautiful plant; a native of Swan River, introduced in 1836.

Chorozema rhombia.—This is a climbing species. The leaves in this species vary very much in form; the shoots are very slender; when well grown it is one mass of scarlet flowers; a native of New Holland, introduced in 1803.

Chorozema scandens.—The *Mirbelia Baxteri* of the "Botanical Register." The flowers are yellow, and the plant is climbing; it is rather a pretty species; a native of New Holland, introduced in 1824.

Chorozema ovata.—This is another lovely species, and when well cultivated nothing can exceed it in beauty, being a little bushy plant, covered with large scarlet flowers; a native of New Holland, introduced in 1830.

Chorozema triangularis (triangular leaved).—The flowers are scarlet, but not so fine as the last; a native of New Holland, introduced in 1830.

Chorozema angustifolia.—This is the *Dilwynia glycinifolia*. The leaves of this species are very narrow; the flowers are yellow and red. It is somewhat of a climber; a native of New South Wales, introduced in 1830.

Chorozema Henchmanni.—This is one of the most beautiful of the whole genus. When in flower it is one splendid sheet of scarlet, that is when the plant is well cultivated, but it is rather difficult to keep any length of time; but I believe the reason of its dying off so soon is, that the plant has too much soil to grow in, and

that the pots are too deep and too narrow. The soil being sifted is another reason why the plants do not live long; the drainage also is incomplete, that is, the stuff that is put over the potsherds is rather too fine; a native of New Holland, introduced in 1825.

Chorozema platylobioides (platylobium like).—This is a very distinct species, and at the same time a very pretty plant; the flowers are yellow; a native of New Holland, introduced in 1825. This is a very rare species.

Chorozema spartioides.—This is a very slender species, and is also a climber; the flowers are large and yellow, and come in

the axils of the leaves. This is rather a scarce species, and is rather difficult to grow, but is certainly well worth cultivating; a native of New Holland, introduced in 1836.

Chorozema spectabilis.—This is a magnificent species; the flowers are scarlet and orange; it is a climbing species, and in habit is nearly allied to rhombia, but is a more abundant flowerer, and is easily cultivated. The flower-spikes are pendant, and produce from five to ten flowers on a spike. Introduced in 1836, and flowered in 1841; a native of New Holland.

P. N. Don.

A FEW GOOD BEDDING PLANTS IN COLOURS.

White.—Double Feverfew; Geranium Boule de Neige; Fuchsia Roi des Blancches; Verbenas Mrs. Holford and White Perfection; Phlox Omniflora Compacta; Enothera Taraxacifolia; White Candytuft.

Scarlet.—Geranium Tom Thumb, Little David, Compactum, Reidii; Verbena Defiance, Géant des Batailles, Brilliant de Vaise, St. Margaret, Boule de Feu; Cuphea Platycentra.

Pink.—Geranium Judy, Lucia Rosea; Verbena Beauty Supreme, Standard of Perfection; Saponaria Calabrica.

Purple.—Verbena Emma, Andre, Purple King, Mulberry; Petunia Prince Albert; Phlox Drummondii, Senecio flore-pleno.

Yellow and Orange.—Calceolaria Aurea floribunda, Rugosa, Amplicaulis; Enothera prostrata, Gaillardia picta.

Lilac and Blue.—Ageratum; Heliotrope; Salvia patens; Forget-me-not; Delphinium formosum and Hendersonii.

Edgings.—Arabis alba lucida, Cerastium tomentosum; Variegated Mint, Golden Balm, Lobelia speciosa, Lady Plymouth Geranium.

GARDEN AND GREENHOUSE WORK FOR APRIL.

ANNUALS of all kinds may be sown now in the open air; the hardy sorts will be up in from ten days to three weeks, the tender kinds in a month or six weeks. It is often a convenience to sow all the kinds at once, in accordance with a general plan, and it may be done in April. Of course, asters, balsams, etc., rarely come to much good by this off-hand method.

ASPARAGUS to be sown for succession beds. (See vol. ii. p. 224.) Established beds to have a dressing of fresh manure pointed in, and the rough stuff to be raked off into the alleys, which are to be forked over.

AURICULAS to be shaded as the bloom progresses, and have shelter at night by means of mats. Give plenty of water.

BEANS to be dressed with soot or wood-ashes and hoed up quite to the lowest leaves. Sow for succession, they like a rich, retentive soil.

BEEF.—Sow between the 1st and 10th

for the first supply, and from the 20th to 25th for general crop.

BEDDING PLANTS to be got into cold frames, if quite bushy, and fit for summer work. Young stock to be kept growing, and seedlings to be potted off either singly or in little groups, as soon as large enough to handle. Geraniums, calceolarias, etc., removed to pits, should be plunged either in spent tan or coal-ashes, which will keep their roots warm and moist, and obviate frequent watering.

CABBAGE AND CAULIFLOWER.—Sow the dwarf sorts of cabbage to follow peas, and fill up anywhere as plots become vacant. Continue planting cauliflowers from frames, but give them the shelter of mats if the nights are frosty. They must have rich soil, be frequently hoed up, and watered in dry weather.

CHRYSANTHEMUMS for general purposes to be now propagated. Suckers are as good as cuttings; and there need be no

disputes about their relative values. They do not require much heat to start them, and nothing better than a gentle hot-bed on the old-fashioned plan. In the Wal-tonian they are sure to mildew if kept very damp and close.

CUCUMBERS.—Sow for ridging out, and get the plants forward in pots. They turn out better when singly in sixty or forty-eight pots; they should have no check. Shift those already forward. Splash water about the beds of fruiting plants, and close early, so as to give the plants a good steaming, which they will enjoy.

HOLLYHOCKS planted now from store pots will bloom to perfection, and have no check from frost. Put a couple of spadefuls of rotten dung in each hole, plant firm, tally and stake at once; cover each plant with an inverted flower-pot for a week, and then remove it. Give plenty of water and liquid manure as require.

HYACINTHS must have abundance of water while in bloom, and for some time after; as long, indeed, as the foliage continues green and growing. After it begins to get discoloured, dry them off gradually, and lay the pots on their sides, where they will have morning and evening sun to ripen

them before removing the bulbs to be stored away.

SEA-KALE to be sown the first week, and to be liberally treated. It becomes productive the second year, and ought to be grown much more than it is. (See vol. iii. p. 28.)

VINES in flower to have plenty of air, and syringing to be discontinued till the berries are set.

VIOLETS planted now from young runners of Russian and the double flowering kinds will make fine plants. For their management, see vol. iii. p. 110 and p. 56 of the last number. Better still to get a pinch of good seed of each of the kinds required, as seedling plants generally bloom most profusely.

WALL TREES must have protection from the cutting east winds, and the protection should be of a kind easily removed, so that the trees have free air upon them night and day, weather permitting, and be covered with the least possible trouble if the wind shifts to east or north. It will generally be found that those who exclaim against protecting have been in the habit of shutting the trees up as if they were muffled bells.

TO CORRESPONDENTS.

CATALOGUES RECEIVED.—“Suttons’ Farmer’s Manual and Seed List for 1861, Sutton and Sons, Reading,” is this year embellished with seventeen selected specimens of roots to assist the grower in determining the characters of the most distinct and most esteemed kinds of mangolds, carrots, turnips, etc. There is also an admirably prepared table of the chemical constituents of twenty nine kinds of farm and garden crops, which may be used as a key to the adaptation of soils, and the application of manures, and some excellent articles on the formation of permanent pastures, and the cultivation of fallow-crops.—“Catalogue of Stove, Greenhouse, and Hardy Exotic and British Ferns; List of Hardy Herbaceous and Alpine Plants, Messrs. A. Stansfield and Sons, Vale Nurseries, Todmorden.” These are two excellent lists. That of ferns contains many novelties exhibited last season, by Messrs. Stansfield, before the Floral Committee of the Horticultural Society. The list of hardy herbaceous plants is full of fine old-fashioned favourites, and all sorts of choice things, that are all but forgotten in the race after novelties of but passing interest. There is no more promising field for enterprising nurserymen than that chosen by Messrs. Stansfield, in the collection of herbaceous plants of real excellence and established character.

POT CULTURE OF GLADIOLI.—*C. J.*—In heavy clay lands the choicer kinds of gladioli will not prosper unless the soil is previously prepared for them by good drainage and burning, and the admixture with the burnt earth of a liberal proportion of sand and leaf-mould. In good turfy peat soils they grow as freely as weeds, if taken up when ripe, and not planted again till the month of April. In all ordinary good loams they thrive if the holes in which they are

planted are first partially filled with sand, and the bulbs covered with sand after being inserted, from four to six inches deep, according to their kinds and sizes. Here is the simple key to their management in pots: good turfy peat or leaf-mould, no animal manures, very complete and effectual drainage, a moderately warm greenhouse, plenty of light except when in bloom, and then to be shaded; the bulbs thoroughly ripened before being stored away. There are three distinct sections of gladioli; 1. The Gandavensis, large corms, very showy flowers, erect habit, the best of all for grouping. Place one bulb in an eight-inch pot, use a mixture of old cow-dung one half part, leaf-mould one part, turfy peat, or well rotted turf from a loamy meadow one part, sharp sand one part. Place the bulb so that it will be just covered with the soil. Give very little water till the plants are in full growth, then plenty till the bloom is over, after which dry them off by degrees, but not to be quite dry till the foliage has died down; then trim away the dead leaves and store the bulbs in dry sand till wanted again for planting. 2. Rimosus, not so robust as the last, and of spreading habit, as the name implies, colours brilliant. Put from two to four bulbs in an eight-inch pot with the same mixture as the last, or better still for these, use fresh chopped fibry peat and sand only, with the crumbs of the peat to cover with. Keep almost dry till the plants are above ground, warm greenhouse, plenty of light, and plenty of water after the plants have made a good start. Dry off as directed above. 3. Cardinalis, slender habited, very neat, brilliant flowers, admirably adapted for pot culture. Put four bulbs in an eight-inch pot, and treat same as directed for 3. All the sections may be

planted now, but the usual plan is to begin potting in December, and thence occasionally to pot additional selections till the end of April to keep up a succession. Of course when potted early they must be protected from frost, and the best place for them is a well-sheltered cold pit. The following are six good ones in each of the three sections: 1. Archambes, Brencleyensis, Count de Morny, Don Juan, La Quintinye, Napoleon III. 2. Abd-el-Kader, Crocata, Imperialis, Lady Franklin, Orange Boven, Paxtoni. 3. Duchess d'Orleans, La Fontaine, Louis Van Houtte, Sebastopol, Taghoni, Victoire Pelé.

WALTONIAN CASE.—*CLIANTHUS DAMPIERI*.—As many amateurs, like myself, find their fingers oily after trimming the Waltonian lamp, I should like them to know a very simple remedy for that evil—it is cutting a hole in the top of the tin to pour in the oil, and thus avoid messing the fingers in unscrewing the brass ring, a serious matter when you are expecting to hear the railway-bell every minute. Except Lady Plymouth no cuttings put in my case look as if they had too much damp, and yet I catch half a pint of water from the legs every day; it distils over. I wanted to make the most of a few plants of Golden Chain; so, after taking the usual leaf and stem cuttings, I sliced all the bare branches into lengths of two eyes, and they are model plants now. I have just raised some *Clianthus Dampieri* from seed; any information about them would oblige.—Yours obliged, H. B. [There is one point settled about *Clianthus Dampieri*, and that is that it is a biennial. Messrs. Henderson's plant, which was the talk of horticultural circles for months together, died after producing about a thousand of its splendid blossoms. To do it well it must be grown quick, else the red spider gets hold of it. Plenty of drainage, plenty of water, a generous greenhouse temperature, the soil to consist of one part each of turfy peat, turfy yellow loam, old cow-dung, and charcoal, broken as small as hazel-nuts. Give weak liquid manure as soon as the plants are a foot high. It will do better turned out into a good border than in a pot, but if shifted as soon as the roots touch the pot, it may be grown to splendid proportions and bloom profusely. Whatever checks the growth is serious injury to it. As to the Waltonian, it has enabled thousands of people to propagate plants who were never able to accomplish it before; but some people expect the Waltonian to do the whole work of affording bottom-heat and managing the plants too. It is in that expectation that disappointments occur. We are keeping two cases at work now, and propagating all sorts of things that we do not want, for the mere fun of the thing. When once we have set the case going we have not heart to stop it. Those who really wish to learn the art of propagating should certainly adopt it.]

CULTURE OF THE LEEK.—*R. J. K.*—The note you refer to was written by Mr. J. B. Weir, of Galashells, and here it is, *verbatim et literatim*:—"The leek, from the delicacy of its soup, and its forming an essential ingredient in Scotch kail, has become a permanent favourite in the kitchen-garden. Of this plant there are two principal varieties, generally known in cottage culture under the distinctive appellations of Scotch and English. The Scotch variety is much hardier than the other, grows much thicker, and does not run so soon to seed, and is therefore better suited for late winter and spring use, while the English sort is generally earlier, stands frost ill, and therefore is more fitted for autumn and early winter use. The ordinary method of cultivating the leek is so well understood that I forbear alluding to it, but will introduce to notice a mode of pro-

pagation which I have pursued successfully for several years, and which I presume has not been previously submitted to the public. In the botanical descriptions of the leek, it is generally, if not always, said to be a biennial, and its root as 'not a bulb, but rather the blanched ends of the leaves' (*Rand's Vegetable Kingdom*, page 268). Now this is a radical mistake, which a little attention will soon make evident, and which the experience of every cultivator of leek-seed can attest by the number of little bulbs which he must have seen attached to the bottom of the stalk after the seed has ripened. In fact, the leek is a true bulbous perennial, requiring two years to perfect its bulbs, and subdividing itself after the manner of the potato-onion, and thus, like it, can be propagated without rearing from seed after a stock of bulbs is once obtained. These ought to be planted in rows nine inches asunder and four or six inches distant in the row, in rich soil, not newly manured, and at least three inches deep. In autumn they should be taken up, a sufficient quantity planted in fresh soil, and the remainder stored for use. These bulbs, which are easily reared to the size of eight or nine inches circumference, form when stewed a very delicious dish, indeed much superior to the onion; and what adds not a little to this superiority is the fact of the flavour being as if one onion and three delicate turnips were harmoniously blended together, the usual flavour of the leek being as it were lost in one more pleasing."

SEED SOWING, DAPHNES, ETC.—*T. E. P.*—The seeds of cyclamens should be sown in February, but as you have lost the proper time, sow at once. Use large seed-pans, or wide-mouthed shallow pots, filled with a mixture of fibrous peat, chopped to the size of walnuts, with all the crumbs and dust, or very sweet leaf-mould and old cow-dung passed through a half-inch riddle, with about a sixth part of sharp sand. Press the stuff firm, put a little of the finest of the mixture on the top, sow thin and cover with about the eighth of an inch of dusty peat. Cover each pan with a square of glass, and put the pans in a shady part of the greenhouse till the seeds are up. The use of the glass is to prevent any need for watering, which might wash out the seeds. The plants must be left in the pans, and carefully attended to for air, light, and water, till August, and then be potted singly in thumb-pots, in a mixture of equal parts turfy-loam, leaf-mould, and very rotten cow-dung, and a half part of sand. Shade after potting for a week, then let them have plenty of light and be kept safe from frost all winter. *Persicum* is rather tender, the others may be wintered in a cold pit. April is the proper season to repot seedlings of the previous year, after which they should be encouraged to grow by means of extra warmth and moisture. The next shift should be in October, at which time large bulbs will require six-inch pots, and all kinds, except *Coum*, should be planted with the crown of the bulb above the soil. *Gentianella*, sow in June, in the open border. They like sandy soil, on a dry bottom; may be moved at any time when well furnished with roots. *Daphnes* are propagated by layers made in June. Cut a tongue in the under-side of the branch to be layered, and insert a chip of wood or small pebble to keep it open; peg it down in its place, which should be trodden hard into a small depression, and cover the tongued part with a spadeful of sandy leaf-mould. Seedling plants of fragrant cyclamens do not always produce fragrant flowers, and seedlings of those without scent sometimes produce fragrant flowers. We cannot name nurserymen for the supply of plants. Our advertising pages enable our readers to pick and choose for themselves.

NOSEGAY GERANIUM.—SPERGULA.—GAZANIA.—

J. R.—The geranium is one of the nosegay section of upright growth, and will bloom freely anywhere, and the poorer and drier the soil the better. The individual flowers are meagre, but the trusses are showy and produce a fine effect. *Gazania splendens* comes sufficiently true from seed for all practical purposes, though in a mass there will be a few varying from the type; but it will not flower liberally the first season. Plants from autumn cuttings begin to flower early in the summer, and keep on blooming prodigiously till November, and that, therefore, is the best mode of propagating. The best way to use seed is to sow in May, to get bloom sufficient to determine the character, to destroy any that are not true, and to cut up the good ones for the next year's stock. *Legally*, any structure placed on the surface of the soil may be removed by the tenant, but anything inserted in the soil may not be taken away, not even a favourite rose or a yard of box-edging. *Practically*, such things are removed, and landlords make no complaint. The human family does not wholly consist of splitters of legal hairs and exactors of the last dime. Our *Spergula pilifera* was very lean and yellow after the frost for about three weeks. During the frost, it appeared unhurt; it is now acquiring its proper lively verdure. Try *Spergula saginoides*; we have our doubts if *Sagina* will make a lawn plant, that point we hope to determine this season. You are mistaken in supposing scarlet geraniums unfit for London gardens. All the good ones—Tom Thumb, Punch, Queen, Cerise, Commander, etc.—do well if rightly managed.

COVERING A PORCH.—*C. S. H.*—The quickest, safest, and cheapest covering would be Virginian creeper. A little less quick would be *sempervirens* roses, very beautiful, fast growing and abundant bloomers, one only to each pillar. These would require plenty of water, and the ground heavily manured before planting, as the chalky substratum will try them. Less quick than the last, but in such a hot place very suitable, *canthosium papillosum*, which would require some good turf chopped over with rotten cow-dung. *Hedera regneriana*, a grand ivy with huge leaves, would run up quick, and be rich and shady. *Clematis corulea* would rejoice in that hot, dry, chalky bottom, and go to the top of the pillars at a rapid pace. Be content with only one kind of plant, have no mixtures. You are in time now to plant any of them from pots.

SALVIA GESNERIFLORA.—*C. J. F.*—This should be showing its bloom spikes now, and should, therefore, not be shifted, but give it plenty of liquid manure, or put a spoonful of genuine Peruvian guano on the surface of the mould every three days and wash it in with water. If not now showing bloom it may be shifted, and you will have to wait for bloom till next season. Shorten the shoots of *Justicia earnea* major to five or six inches in length, shake it out and repot in rich compost, plunge in bottom-heat, shift again as the plant advances, syringe frequently, and by the middle of July it should be a handsome specimen, with from fifteen to twenty fine heads of bloom. The tops now cut off if placed in bottom-heat—say, a cucumber frame at work—would soon make fine young plants. *Gaillardia*, *heliotropes*, *lobelias*, and *gazanias* will all bloom this season if sown immediately, and pushed on in heat, but you ought to have set them to work on the 1st of February. The *Linum* we have always advised to sow where it is to bloom, and to give it no artificial heat at all. *Campanula pyramidalis* is a biennial. *Tacsonia ignea* will not flower the first season; it is a more effective plant than *pinnati stipula*.

ACACIAS.—*W. R. H.*—There is no difficulty in

growing any number of greenhouse acacias, but the best way to deal with them is to plant them out in conservatory borders, in a mixture of good turfy peat, leaf-mould, and loam, and let them grow almost as they like. You then have the natural grace that belongs to them. Cuttings of young shoots, taken off with a heel, strike readily under hand-lights in sandy peat during the summer, and should be grown on in pots till large enough to turn out. They may also be propagated from pieces of the large roots. The greenhouse kinds require a temperature averaging 49° all winter—it should never be below than 35°—and at the turn of the season, when they begin to push for bloom, more heat and moisture. The most useful kinds are to be had at all respectable nurseries. You will find notes on acacias at pages 143 and 281 of our second volume, and at page 169 of our third volume. The following are the best for amateurs:—*affinis*, *ameua*, *aristata*, *dealbata*, *decurrens*, *dolabriformis*, *emarginata*, *floribunda*, *grandis*, *juniperina*, *rotundifolia*, *lophantha*, and *taxifolia*.

FUCHSIAS NEWLY POTTED.—*Dr. N., Cork.*—You can only make them grow faster by means of warmth and moisture. They want a splash overhead every day now, and plenty of water at the root. It is astonishing how much fuchsias will drink up, and they will not grow well unless their heads are often moistened. Use the syringe morning and evening, or evening only if you are pinched for time, and let the water be tepid. The salts you propose to use must be in weak solutions. Strip off your coarse turf and stack it up to use as compost; make a smooth surface, and sow at once the best lawn mixture, and your turf will be good by the middle of July. Had you sown at the end of February we should have promised a good sward by mid-summer. Leave it to the seedsman to choose the sorts, but tell him the measurement of the surface to be covered, and if the soil is in any way peculiar say so. Sow thick; rake and roll, and leave the rest to Nature. For four years in succession we stripped a large lawn and sowed afresh in March, and always had a beautiful turf by the 1st of July, though, of course, the surface was green a few weeks after sowing.

FERNS.—MANDEVILLEAS.—*G. B. M.*—The fern sent is *Cyrtomium falcatum*, and the same is sent, we presume from the same writer, with the initials *M. B. G.* The frond first sent is from a seedling plant, it will produce spores when about nine inches high. A frond two feet in length, full of fructification is a most beautiful object.—*Pembroke.*—The fern is *Lastræa spinulosa*. The treatment of *Mandevilleas* is most simple. Now is the right moment to prune them back to a pair of plump eyes, and encourage growth by heat and moisture. If in a pot, shake out the old soil, and repot in equal parts peat, loam, and leaf-mould or very rotten dung. Plunge in bottom-heat, attend to training and good growth, and bloom will be the result. We imagine you fail through insufficiency of heat, or through starving the plants.

ORANGES AND POMEGRANATES.—*Subscriber.*—These fail in private gardens more through being starved than through want of heat. The soil in the pots and boxes is allowed to get sour and effete, whereas it should be renewed every year by the removal of some of the old stuff round the sides, as deep as can be without injury to the roots. The new soil should be lumps of turfy-loam and cakes of the cow-manure rained in hard, and during the few hot months liquid manure should be given once a-week. By thus insuring free summer growth, bloom and fruit will result in their season. They may be wintered at an average temperature of 49°, nay, we have kept them in cool houses without fire-heat, except to just keep frost out, giving them a steady rise of tem-

perature, when breaking, in spring. All the citron family require as much shade as camellias. Pomegranates will not mind how much sun they have, and if stood out under a hot wall, after the end of May, will occasion no further trouble beyond watering.

HARD SEEDS.—*P. H. G.*—If a hot-bed or hot water tank is at command, put the seeds in water of the temperature of the bed, and let them remain in the water, and on the bed, till they have swelled considerably, and then sow them. It is best to remove the hard integument with a sharp, strong knife without injuring the farinaceous or germinating parts. We generally do this with seeds of camellia and *Martynia* fragrans, and they come up very soon after sowing. It is, we imagine, not so much the hardness as the oleaginous nature of the integuments that prevents their soaking.

WALTONIAN CASE.—Numerous complaints have reached us that Mr. West neither answers letters nor executes orders promptly. We are most unwilling to allude to the matter on *ex parte* statements, but as we know nothing of Mr. West's affairs, and have dealt with the invention and not with the maker, we must claim to be absolved from all responsibility. We have nothing to do with the sale of any article we recommend. It may be right, however, for us to remind our readers that, at this season of the year, orders for Waltonians are perhaps given faster than they can be executed. Such a thing as this should be ordered before Christmas, and when received set to work for a week that the possessor may be a little used to its ways before commencing to propagate with it.

PAMPAS GRASS.—*Subscriber.*—Not knowing where you live, whether in Jersey, where the pampas grasses are not much hurt, or in any part of England, where there is scarcely a plant left alive, we cannot say whether you ought to dig up the root and throw it on the rubbish heap—which if dead is the best that can be done with it; or cut it close over, and leave it alone, which is the best to be done if the root is alive. The same with the Banksian rose; if in a very warm place you might prune at once; if in a cold place wait till the end of April, then cut back to a strong shoot near the bottom, even to the collar if you can, and get new wood to take the place of that injured by the frost.

WATER LILIES.—*F. B. M.*—You must give up the idea of having the red and blue flowered water lilies in your open-air aquarium. The beautiful *Nymphaea cœrulea*, *Devoniensis*, *gigantea*, *rubra*, *stellata*, *versicolor*, and others, insist on having the water hot; and if you make a scrutiny of the basins at the Crystal Palace, where these lilies have charmed you, you will see the pipes by which the water is heated, and it will be easy to discover by the species and their degrees of luxuriance where the water is warmest and where coolest. There are five hardy *Nymphaeas* in general cultivation, and about fifty more that invite the attention of wealthy horticulturists.

WALTONIAN.—*Polly.*—The two-light frame will be the best of all places at your command to receive newly-struck cuttings, etc., from the case. Mind the little wee things are not burnt up by sunshine. Of course cucumbers may be grown in the same way as recommended for out-door melons. In former issues of this work the most minute particulars have been given of the ways and means of propagating.—*Notice.*—We never recommended a temperature of 80°; very few of the plants required for garden decoration need more than 60°. You will find all difficulties vanish as you acquire experience.

MICE.—*Constant Reader* finds his crocuses diminished by the attacks of mice, and considers his borders too extensive for traps. In Loudon's

Encyclopædia of Gardening a plan is proposed which is so simple that it may be adopted on the largest extent of land infested by mice, and it is merely the sinking of an empty flower-pot in a hole cut in the soil to fit it exactly. The pot must be plunged bottom upwards, and a bait introduced. The mice enter through the hole in the bottom of the pot and are unable to get out.

GREENHOUSE CONSTRUCTION.—*P. S. M.*—The most suitable material for the flue is common bricks well laid with hot lime and the usual proportion of sand. Let the bricks be soaked in water before laying them, and the mortar to be used while quite fresh. A good sound flue will be the result, through which the fumes from the burning fuel will not escape to the injury of the plants.

POLYANTHUSES.—*A. B. S.*—Your postscript solves the riddle. Divide in July and August, and shade till rooted. Grow your stock in rich soil of a rather heavy character; they do not like sand.

VARIOUS.—*J. P.*—Chater, Saffron Walden.—*Constant, Kent.*—Deane, London Bridge, 7s, and upwards.—*P.*—We did not issue a coloured plate in 1860, the work is too cheap to leave a margin for it. In our first number we distinctly stated that subscribers were to regard them as gifts, and not as necessarily connected with the undertaking.—*Ph.*—We do not know to what plants you refer, nor did we see the description you refer to.—*Milton.*—Mr. Turner sent out most of Dr. Maclean's seedling peas; you would probably learn all you wish to know by writing to Mr. Turner, Royal Nursery, Slough.—*A Tyro.*—There is no need to give a ground plan of an evergreen bed, because the arrangement depends very much on the size of the plants. The outer circle of the bed described is planted simply to the rule of making the plants fit, giving some more room than others; this could not be shown on any plan. It is sufficient for the reader to know that they average nine inches apart, and thus fifty-seven are disposed of in a circle of about forty feet. A ground plan would be simply a circle filled with a confusion of dots.—*Mrs. T.*—We suppose any respectable nurseryman could supply the plant you want; we can only refer you to Mr. Thompson, who sent it out. The seeds are declined with thanks.

—*P. B., Nantwich.*—We should be glad to oblige you, but really we cannot undertake to arrange the planting of your twenty-two beds. Suppose we do so for you, then we must do the same for all, and how would our own beds be planted, and what would become of us to trifle with time in such a way? Besides, you might not like our planting, and then—!—*H. M.* All seeds from abroad should be sown as soon as received, or as soon after as possible; New Zealand seeds must of course have heat to start them. Azalea seed sow as soon as ripe, or at any season of the year if you have command of heat to keep the young plants growing. This is a good season for seeds of all kinds of greenhouse shrubs, because we have the summer before us to grow the young stock to a good size.—*J. H.*—Most of the artificial manures are good if used as directed by the manufacturers, and the good ones are as suitable for garden as for farming uses. Potatoes are best planted on soil well manured the year before; if planted with manure there is a great chance of disease in the crop. But potatoes may be assisted on poor soils by artificial manures strewn over the rows and hoed in, after they have made three or four inches of green tops. Wood-ashes, superphosphate of lime, and soot may be thus used; or guano at the rate of three cwt. per acre, or Epsom salts (sulphate of magnesia) at the rate of one cwt. per acre.—*T. A. P.*—Too late,]

THE
FLORAL WORLD

AND
GARDEN GUIDE.

MAY, 1861.



COLOUR, like sound, is the subject of law, and harmonies of hues are as easily determined as harmonies in musical chords. That which is in accordance with good taste is also in accordance with the principles of science; for, after all, taste is only the application to decorative purposes of the principles taught by sound philosophy. Yet there has been much said on the subject of colour in gardening which has proved to be incorrect, and the mistakes of theoretical colourists have generally arisen through their recognition of too few of the data on which judgments should be founded. In designing a damask, the artist must know what is to be the ground colour, but in devising schemes of planting, the ground colour has generally been forgotten, and heterogeneous mixtures instead of agreeable harmonies have too often been the result. Therefore, in devising a scheme of flower embroidery, or in planting a group of beds, or a breadth of ribbon lines, the whole must have a recognized relation to the ground colour, or the result will be a violation of harmonies. Generally speaking we have three distinct classes of ground colour on which to paint our flower mosaics, and these consist of walks, soil, and turf. Geometric patterns on sand and gravel, have usually a ground hue of ochreous brown, ferruginous red, or tawny amber. In chalk districts the paths are white, in coal districts they are frequently black; in the majority of places the colour of well washed gravel, though that varies from deep orange red to pale straw colour. Then the soil varies in colour from the red of Dartmoor to the black of the New Forest, from the slaty blue of some veins of the London clay to the gray and tawny hues of various sands and loams. As to the turf, whether of grass or spergula, that is pretty uniform, but on heathy districts the grass is not exactly of the same hue of green as on a wet clay or fertile loam. One consequence of this recognition of the importance of ground colour is, that every scheme of planting should be determined on the spot, where the eye can judge at once as to the nature of the elements required, and the style of their combination. The

colour of the soil is generally of little import, because that is supposed to be covered, but where breadths of soil are to remain visible, the planter must bear the fact in mind; as, for instance, a mass of pale yellow *œnotheras*, *Amplexicaulis calceolarias*, or even Golden Chain geranium, would lose much of its beauty beside a space of visible gravel or sand, or yellow loam, though the bronze of perilla, or the blue of *Salvia patens* would have congenial relief there. But the soil is supposed to be covered, and if not covered, its colour must be considered, and the hint may be of value, that to relieve yellow and orange flowers, and light gray and golden foliage, a dressing of soot, to be occasionally repeated, adds very much to the richness of the colouring.

Where but two or three colours are seen at one time, the best of all rules is to adopt the complementaries, and have nothing to do with intermediates and neutrals. The more search is made after curious things and novel colours, the farther off will be good taste and agreeable effects. The bright green of grass turf is almost exactly balanced by the vivid scarlet of the zonale geraniums, hence the popularity of these plants, for the eye appreciates good contrasts even when unused to analyze them; with the green and the scarlet we have the whole of the spectrum, and while enjoying them the eye never asks for another colour. But suppose the scene to require three masses, then two reds and one white will be a pretty fair balance of both colour and light, for the last-named element is at its maximum in white, hence too great a predominance of white in a set of beds will render all other colours inconspicuous or all but invisible. Supposing again that only a few beds are visible from the same point, and scarlet and white are not to be used, perhaps because employed in scenes we have just been inspecting, then we have in other complementaries the most chaste, though not the most showy, of all the effects possible in colour, and that is in the employment of violet and yellow, or blue and orange. But observe, that in this case the two contrasted colours should be near in order that the eye may mix them easily, or they cease to be complementary. Hence there ought, in such arrangement, to be as small a breadth of grass as possible, except as a boundary to the whole. To make a set of three on this plan, the central mass should be of vivid plum, with pale yellow on either side, or bright blue with rich orange on either side, the colours dense and distinct, and only so far separated by turf that the eye can still survey them without difficulty. In small gardens there are generally too many beds, too many colours, and too large a mixture of neutrals; indeed neutrals are scarcely wanted, or in very subordinate quantities, in small gardens. The idea is frequently entertained that a multitude of small beds will increase the apparent size of the place, but the truth is, that is just the way to make it smaller. A few grand sweeping masses, as extensive as can be, consistent with surrounding elements, will give the idea of a large area, by its freedom, and its demand upon the eye to make the survey under an obtuse angle.

When we leave the small domain, and attempt the planting of an extensive piece of ground, we have to consider how, by the disposition of the surface, the several parts are seen together or separate; where seen together neutral colours will be of great value in forming connecting links between all strong colours, and the various silvery and gray foliaged plants are of very great value. Not only is the eye pleased by the quiet relief of these neutrals, but when judiciously disposed, they bring out the true

colours of the flower masses by partly obliterating the effect of the green turf upon them; so that the turf appears as turf, or in other words as a distinct element, not as a component of the colouring. For instance, blue never has a good effect when in juxtaposition with green, because the green has in it a good deal of blue, hence a gray edging separates the green from the blue, and brings out the respective distinctness of both. So again yellow never looks well in juxtaposition with green, because the green is itself half made up of yellow, hence if we could have it, black would be the proper edging to masses of yellow upon a green ground. Black and saffron are combinations of which the textile artist knows the value well, but we have no black flowers, and if we had, possibly their green foliage would weaken their distinctness for such a purpose, consequently yellow is the most difficult of all colours to manage, and is as likely to give a vulgar tone as otherwise, especially if combined with red in the same arrangement. Planters of gardens may derive considerable information as to the ultimate effects of certain conceptions by first making a sketch of the ground on paper, and then filling in the several tones with water colours; however roughly the drawing may be made, if the colours are pretty true to those the plants are intended to produce, errors in the plan will be readily detected, and mistakes may be avoided before it is too late to remedy them. But when in walking over an extent of ground we come successively upon masses that are not all visible at one view, an important law of vision must be borne in mind. After the eye has received an impression, that impression remains upon it for some time; therefore, if we have dazzled it by an excess of light—as for instance, by those most glittering of all mixtures, white alyssum and Flower of the Day, or Countess of Warwick and *Cineraria maritima*, or variegated mint and Lord Raglan or Defiance verbena—it will be glad of the relief at the next turn of a mass of perilla or purple orach or blue verbena, which give repose, and restore it from the effects of the glare it has just been submitted to.

Mere mixtures of colours are seldom satisfactory in geometric planting. Verbenas are too often wasted by the heterogeneous assemblage of twenty or thirty colours, where one would be sufficient and preferable. If mixtures are adopted it should be according to a definite plan, and not by fortuity, and in such a way that each will help the other; as, for instance, purple orach with variegated geranium, plant for plant, or in groups each of three, gives a symmetrical dotting of gray, scarlet, and crimson bronze; variegated alyssum with Annie geranium, one of the best of the variegated-leaved scarlets, adds to the whiteness of the white, and brings out the scarlet effectively. It is in these mixtures that the florists have invariably violated the principles of art, as in a bed of tulips on the orthodox plan of a byblœmen, a bizarre, and a rose, the interest depends on the merits of individual flowers, not on the effect of the mass, view it which way you will. Then, again, we have to consider the forms as well as the colours of foliage, and, still more important, the style of the flowers, whether perpendicular or horizontal in their greatest breadth of colour. A bed of scarlet geraniums is as good an example as any that can be given of horizontal leaves and flowers, and it is therefore best seen from above, as when on the level of the ground where leaves and flowers present their greatest breadth at once to the eye. In the same position fuchsias are much less effective, because their greatest extent of surface is perpendicular. Therefore we need to see them on a level with the eye, when their pendant

character has its proper grace, and the colouring its fullest possible access to the vision. But when geraniums are lifted up—except in ordinary raised beds, where we see them at a low angle—they lose much of their beauty, we see the edges instead of the faces of the leaves and trusses. These and many other points of equal importance need attention, now that the ground is to be laid out in carpet patterns, ribbons, and bold groups. It is a good rule to do too little rather than too much. Many a grand effect that astonishes and delights the spectator when visiting such places as Kew or Sydenham, or the west end parks, would be a waste of plants, and an abortion of taste, if adopted in his own limited garden. A bold acceptance of the complementary colours will always give delight, and in this there is no difficulty, and happily the plants that produce the most distinct effects are within everybody's reach. We treated upon this subject somewhat at length in the *FLORAL WORLD* for June, 1858 (Vol. i. p. 121), and we refer the reader to the remarks to be found there as useful in conjunction with the foregoing at this important moment of bedding out.

THE disastrous influence of excessive moisture last season was evinced to a serious extent in the diseased state of the potato crop, on all low-lying, ill-drained, or naturally cold soils. In our notes on potato culture, in the chapters on "Profitable Gardening," we advised early planting of early sorts, and their removal from the ground before the season at which the heavy autumnal rains usually set in. We repeat that advice, and add to it here that, instead of planting potatoes in large continuous breadths, it will be a much safer plan to plant in rows far apart, and to crop the spaces between with other esculents. Whether the fungus spreads from the foliage down to the tubers, or from the tubers up to the foliage, is a matter not yet determined; but it is quite certain that excessive moisture has very much to do with it, and that in dry seasons, on dry soils, the potatoes generally escape the attacks of the disease. We are glad to notice that the continuance of the disease has not only caused inquiry and discussion amongst scientific horticulturists, but improved practices among cottagers, allotment holders, and others who lie out of the general circle of inquiring cultivators. Supposing the fungus to extend downwards, it is then evident that if the rows are far apart with trenches between, the haulm can be laid down, so that superfluous water will flow away, and not towards the roots. Supposing the fungus to extend upwards, then the laying down (not removal) of the haulm will admit the sunshine to the collar of the plant, prevent the spread of the fungus through the succulent stems, and materially assist in preventing or checking the spread of the disease. On either supposition, close planting is injurious; planting at intervals preferable, and this separation of the rows may be variously effected. If the plan of planting broadly is preferred, the rows should be not less than a yard apart; the sets should be a yard apart in the rows, and should be neither dibbled in nor laid in trenches, but on the level, and earthed over with soil from between the rows. As growth proceeds, more earth may be removed from the alleys to make them deeper, and added to the ridges, and the haulms can then be toppled over to hang down in the trenches to promote dryness of soil about the tubers, and convey away heavy rains from the stems and leaves. Another

method may be adopted, and one, we think, preferable, of planting potatoes and celery alternately. The potatoes may then be in double rows, with liberal space between them, and the celery trench on each side of the double row of potatoes. At the planting of the celery, the haulms can be pressed down, and the collars of the stems moulded over, and thus during heavy rains the water will drain off to the celery, and do good, away from the potatoes where it would do harm. Our potato crops are this season in double rows, with early peas alternating; the peas will be succeeded by celery and brocoli; the haulms will be turned right and left towards the intervening spaces, and we shall lift as soon as the outer edges of the leaves of the potatoes begin to get shrivelled and discoloured, for potatoes when fully grown will ripen best removed from the ground, and no more growth takes place after the foliage begins to show signs of decay. If left in the ground till the haulm decays, that which a fortnight previously was a good crop may prove worthless, the disease having commenced its attack coincidently with the decay of the foliage, and completed its ravages before the moment of harvesting.

NOTES OF THE MONTH.

ROYAL BOTANIC, April 3.—This was the second spring meeting. It comprised stove and greenhouse plants and spring flowers. Mr. Turner sent some fine roses, among which were *Baronne Prevost*, *William Jesse*, *Jules Margottin*, *Lord Raglan*, and *Souvenir de Malmaison*. Messrs. Fraser sent the new rose *Victor Verdier*, which we last season described as of the very first excellence; also *Mademoiselle Bonnaire*, white with pink centre, and *Vainqueur de Solferino*, bright rose. Messrs. Paul sent some charming boxes of cut roses, among which was *Isabella Gray*, which was much admired. Of cinerarias, Messrs. Dobson sent *Etna*, *Brilliant*, *Mrs. Hoyle*, *Perfection*, *Novelty*, *Duchess of Sutherland*; Messrs. Smith of Dulwich some seedlings, among which *Queen of Spring*, white, crimson purple edge, dark disk, and *Louise*, of the same class but distinct, were the best. *Rosy Morn*, also in Mr. Smith's lot, is a beautiful rose pink, with light centre. Mr. Turner had *Prairie Bird*, violet blue, and *James Andrews*, violet, purple self. Mr. James, gardener to W. F. Watson, Esq., Isleworth, had a certificate for *Duchess of Hamilton*, a fine flower, white, dark centre, broadly edged with purple. *Azalea*, *Flag of Truce*, a new double white, shown by Mr. Todman, was awarded a certificate, as was also *Lord Elgin*, bright rosy crimson. Mr. Turner sent *auriculas*, *Duke of Wellington*, *Eliza*, *Colonel Taylor*, *Glory*, *Mary Gray*, *Waterloo*, and *Rifleman*. *Imatophyllum miniatum*, frequently mentioned in previous pages, was shown in a fine state by Messrs. Parker and Williams. Pansies, primulas, and hyacinths were extensively exhibited, but there were few novelties among them.

ROYAL HORTICULTURAL SOCIETY.—Among the plants of special interest recently exhibited before the Floral Committee, the following may be named:—*Pteris cretica*, shown by Messrs Veitch and Mr. Bull, a beautiful variegated fern. Fern-leaved primulas, very showy and distinct in habit, shown by Messrs. E. G. Henderson and Sons. *Epacris Vesta*, white, tipped with pink, very beautiful, by Messrs. Veitch. *Auricula*, *George Jeans*, gray edged, finely formed, from Mr. Turner. *Cineraria*, *Miss Eyles*, white, dark centre, noticed favourably last season, from Mr. Turner. *Campylobotrys refulgens*, a plant with leaves ten to fourteen inches in length, handsomely marked with silvery veins, from Mr. Bull. *Veronica chamædrys pulcherrima*, a variegated

variety of the well-known and beautiful speedwell, from Mr. Salter, who sent also variegated varieties of *Lunaria biennis* and *Symphitum officinale*. Mr. Salter has now the largest and most curious collection of hardy variegated plants ever brought together.

GREEN HOLLIES.

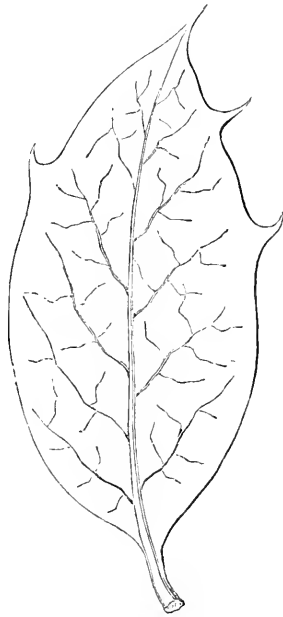
AMID the wreck of the winter, which has made many a garden that had cost years of labour and large periodical outlays a mere waste, less attractive than a heath, the hollies remain as fresh and bright as ever, and are now showing their new growth in a way that proves them hardiest of the hardy, and the best of our old garden friends. Hollies are always beautiful, even if out of place, and they are so adaptable to every variety of scene, the finished belt flanking a flowery lawn, the less artistic shrubbery, the sequestered walk, the dark wilderness, or the nook beside a cottage-wall, that it is no easy matter to plant them where they ought not to be. Fine single specimens towering up conspicuously at the break in a walk, or assisting to enrich masses of mixed evergreens, are among the noblest elements of the gardenesque, and for masses there is nothing to surpass them for splendour of foliage and their glorious colouring when loaded with berries. The holly ought not to come before us in these pages without at least a page or two of memoranda, as to its place in history, and the name and fame it bears in its association with the muses and the household gods; but we cannot now turn aside from the practical department, for this is the time to plant the holly, and where the losses among evergreens are now thoroughly ascertained, a few notes may be of special value to those who wish to plant at once, and repair some of the waste caused by the cruel winter. Next month we may be able to find room for observations of another kind that may be interesting. At present garden-work is in our mind, as it is heavy on our hands, and we suppose our readers to be situated as ourselves, with more to do out of doors than hands can accomplish, and the right way to do it a matter of the first importance.

We have been favoured by Messrs. Paul and Son, of Cheshunt, with specimens of all the leading varieties of green and variegated hollies grown there, and have had drawings made of the leaves of a selected number of the most distinct and beautiful varieties. Of these we shall describe the green kinds first, and next month the variegated. Detailed descriptions are unnecessary, because the engravings will, to some extent,

explain themselves, and that leaves room for some preliminary remarks, which we will classify under separate heads:—

HOLLIES FROM SEED.

The general opinion is that *all* hollies are raised from seed, but that is a mistake. They can be raised from cuttings; choice kinds are grafted or budded on seedling stocks, and whether from seed, cuttings,

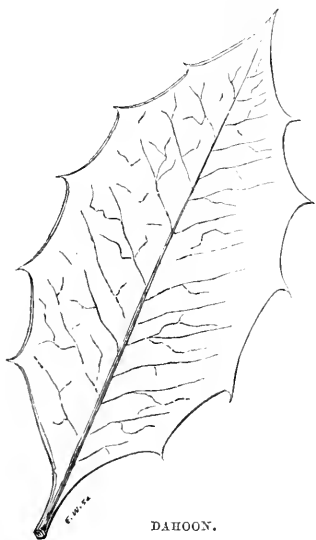


LAURIFOLIA.

or grafts, they are the slowest growing of all ornamental shrubs. To raise them from seed is tedious work, and will rarely be attempted by the amateur gardener. The berries are to be gathered as soon as ripe, and to be at once mixed with about four times their bulk of sand or old soil from flower-pots, and the mixture thrown in a heap into some out-of-the-way corner, where they will keep moist without much attention. There they must remain twelve months, and in the interim be turned at

least once a month, to hasten the rotting of the pulp. At the close of the winter following their committal to the rot-heap, sift the whole over, to separate the seeds, and sow in February on a bed of rich light soil. Young hollies are, however, rather tender; the sun tries them, and morning frosts sometimes kill them down, and it is, therefore, better to sow on a bed made up in a cold pit or frame where the young plants can have better nursing than in the open air. In the *Gardener's Kalender* of Philip Miller, he says—"Many people dig a trench in the ground about a foot deep, and lay the haws, hips, and holly berries therein, covering them over with earth pretty thick, and letting them remain one year; then they take them out and sow them in beds

through his hands being idle. I should think a similar process could be adopted with holly berries, so as to sow them immediately after gathering, when a greater proportion would come up than when the seeds are rotted out.



DAHOON.

the following October, and the plants will come up the spring after."

The objection to Miller's plan is that the seeds take too much room during the slow process of rotting the pulp, and a hole in a bye corner is a neater as well as a more economic method. Dig the hole three feet deep, and then mix the berries with fine soil, and throw them in. Fill in with the stuff taken out of the hole, and over it make a bank of leaves the following autumn to prevent the access of frost to the berries. In sowing rose hips, I have saved the trouble and delay of the rotting process by shelling out the seeds by hand, and it is a job that a garden boy will do as well as any one else, at odd times when his head might get full of mischief



DONNINGTONENSIS.

As they are not to be moved for a year, the seeds should be sown thin, and in regular rows across the bed. Keep them free from weeds all the summer by hand-weeding; give water frequently, but never in large quantities; shade from mid-day sun from the end of May to the middle of



LATISPINA.

August, then let them be fully exposed to be hardened for the winter.

GRAFTS AND CUTTINGS.]

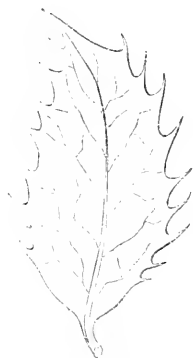
The choice kinds are generally grafted on strong seedling stocks, and the month of March is the best time for the operation,

though, in a moist spring, it may be continued to the end of April. Budding will be found a much safer method for the amateur who wishes to convert common green hollies into variegated ones. The bark lifts nicely at the end of June and through

the end of July, and dibbled into a rich sandy mixture, under hand-lights or frames, are the easiest to root, and the process depends very much on the regularity of the attention they receive. The soil should never be soddened, but always moist, the



LATIFOLIA.



CILIATUM MINUS.



CRASSIFOLIA.

July, and, if carefully entered, every bud will take. As to cuttings, Messrs. Cut-bush, of Highgate, grow thousands, and they make beautiful plants. The young shoots of the year taken off with a heel at

cuttings frequently syringed, and never tried by exposure to hot sun till well rooted. But at the Highgate nursery they think nothing of rooting hard wood in pieces of five feet long, and thus dispense with the

tedium of raising seedling stocks, and grafting upon them.

CULTURE OF THE HOLLY.

The holly grows slowly, and *dies* slowly. Trees moved at an unsuitable season, or in an improper way, will hold their foliage and actually break in spring, as if doing well, but by degrees they lose their looks. The young shoots go black and dry up, and by slow degrees it becomes manifest that there is no root-action, and the end is death. Small trees that have been frequently lifted in the nursery, and that come up with good balls, may be moved on any day of the year if the ground is in a fit state for working; but if you want to make sure of a plantation, let it be made from the middle of April to the end of May, or from the 1st of August to the 15th of September. The best of all times for removing hollies is the 1st of May and the 10th of August, the worst time during winter. Dull moist weather without rain, or at most only a sprinkle, is the best for the operation; but if the removal takes place during sunny weather, take care that the earth is well washed in about the roots after treading them up, or crumble in some fine stuff round the roots, or tack in the soil well if the ball is broken under the main fleshy roots, fill in loosely, give a good soaking, and leave them two or three days before treading up, and then tread firm. From the first they should be syringed twice a-day till rainy weather sets in, and after that they will take care of themselves, but where extra growth and extra beauty are desired, the syringe will do wonders, if used regularly from the first week in April till the end of June.

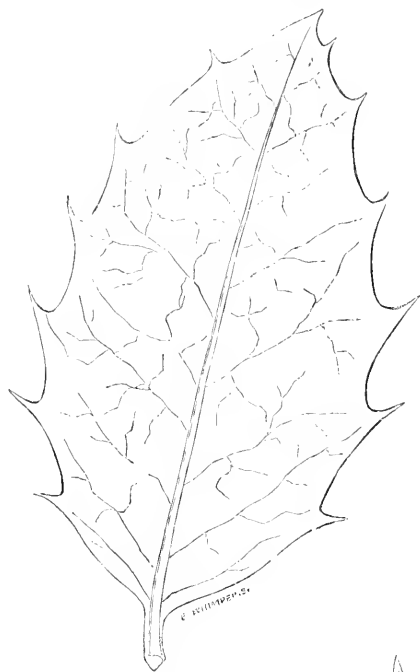
The soil in which the holly delights is a deep rich sandy loam on a dry bottom. Wet is almost death to it, and in boggy soils the only sure way is to plant all the hollies on hillocks as you would araucarias. Evergreen shrubs are too often neglected as objects of culture, but whoever will bestow upon them an annual surfacing of half-rotted dung, to be dug in between the plants, without injury to the roots, and pointed in about the collar where the roots are near the surface, will find their account in the improved beauty and vigour of the trees, and especially so in the case of hollies. It is a general advice in gardening books never to plant hollies under trees. This advice need not be heeded. It used to set me thinking on the subject when, as a boy, I made observations upon the trees in Hainhault and Wanstead forests, and gathered blackberries and wild flowers under the shade of immense masses

of the common ilex, which were again shaded by immense oaks and elms and hornbeams. There you will find them still, if the enclosure act has not annihilated them, as handsome masses of green holly as any in the kingdom, and *all* the masses are in the deep shade of deciduous trees. When I was old enough to plant hollies, I used them for underwood, and experience tells me that all the popular kinds of green hollies do as well or better under trees than in the open air. Variegates are not so well at home in shadow; they need full exposure and breezy positions to grow freely and make the most of their beautiful characters.

As a rule, hollies should be allowed to grow as they like; but though a good rule, there are exceptions to it. Sometimes from the side of a well shaped pyramid a strong branch will shoot up like a pole, to the disfigurement of the specimen. The best way to deal with such an ugly and over vigorous growth is to cut it clean away. But the knife can do little in a general way for hollies, except the case of holly hedges that have got bare at the bottom, when cutting down to one line will cause a production of abundance of furniture near the ground. The proper season for pruning is March.

SPECIES AND VARIETIES.

Ilex aquifolium is the common holly of Britain. It is a beautiful tree, and a profuse berry-bearer, and grows to great perfection on rich deep loams under the shade of other trees. Most of the ornamental hollies are varieties of it, and their name is legion. It would be a waste of space were we to enumerate all the kinds that have names in catalogues, and we know of many quite as beautiful as the best in general cultivation that have never been catalogued at all. The white-berried, golden-berried, and black-berried, the laurel-leaved, thick margined-leaved, spineless, broad-leaved, small hair-fringed leaved, narrow-leaved, and bent-back leaved, are all varieties of it, and among the most interesting. So also are all the variegated kinds in common cultivation for garden purposes. If it is purposed to make a selection of hollies, the best way would be to visit a nursery where they are grown in great variety, and pick and choose from the plants as they stand, for the commonest are as intrinsically beautiful as those that are rare, and among variegated shrubs there is nothing to surpass the silver and gold varieties of the common holly. It is not often we meet with the stove and greenhouse species in cultivation, and the

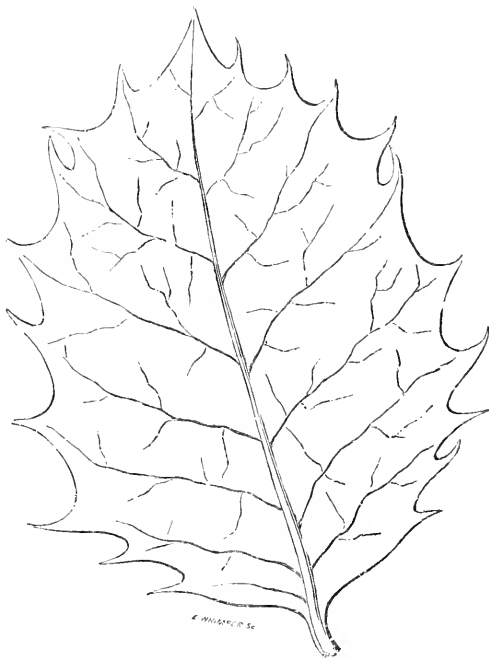


MADEIRAENSIS.

mas. Of the greenhouse kinds, *angustifolius*, *Chinensis*, *Magellanica*, and *Perado*, are the best, and the last-named is the only one with coloured flowers, which are pink; in all other species and varieties the flowers are white, and add but little to the beauty of the trees.

Among the hardy hollies, *aquifolium* must have first place, because of its importance as a native timber tree. But a collection of the best hollies would include many others besides this and its varieties; and perhaps *Balearica*, the grand *Minorca* holly, is, all things considered, the finest, both for its broad, shining, entire, rich green leaves as for the glowing vermilion of its abundantly produced berries. Assuredly a fine specimen of the *Minorca* holly is worth pausing to admire, during a walk over

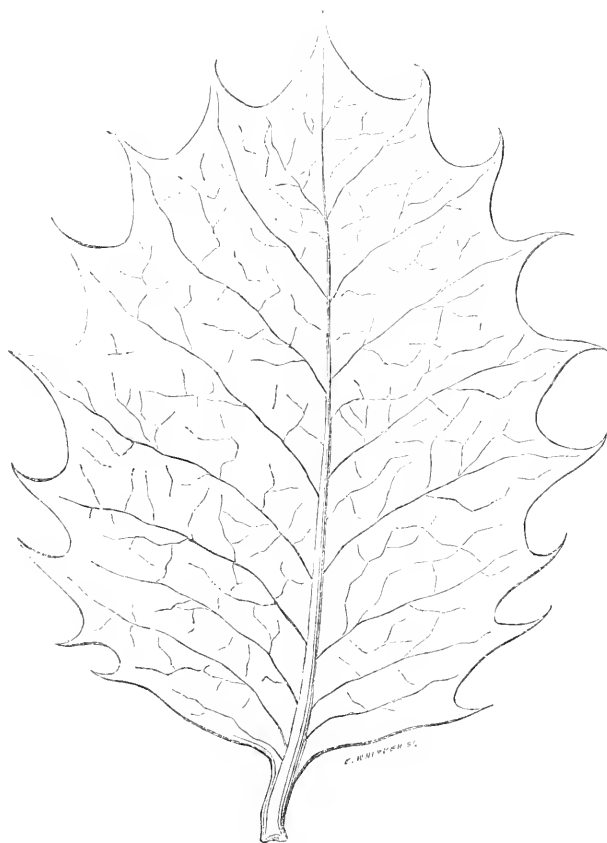
reason is that, being so well represented out of doors, cultivators do not care to make room for them, when so many other subjects not at all represented among hardy plants claim attention. Of the stove species, *myrtifolia*, the myrtle-leaved, *Paraguensis*, the leaves of which are used in Paraguay for tea, and *salicifolia*, the willow-leaved, are the chief. Mr. Forsyth has made a pet subject of the Paraguay holly, and from having seen how extensively it is used for infusions, and in the same way as the tea plant is in China and this country, he feels persuaded that a wholesome and stimulant tea might be obtained from the leaves of the common English holly. As we cannot go into this question now, we will not characterize Mr. Forsyth's proposition as extravagant, let us rather welcome every endeavour to utilize things that at present have no value. The day *may* come when the holly may be as acceptable in the teapot as among the green boughs that mingle in the joys of Christ-



NOBILIS.

a well kept garden. The Dahoon holly is very distinct from both, dense in growth, the foliage small, and it rarely attains to a greater height than six or seven feet, whereas aquifolium will grow twenty feet and more, and the Minorca twelve or fifteen. Canariensis and Cassine are distinct and useful kinds, of robust habit and admirable for specimens ; others

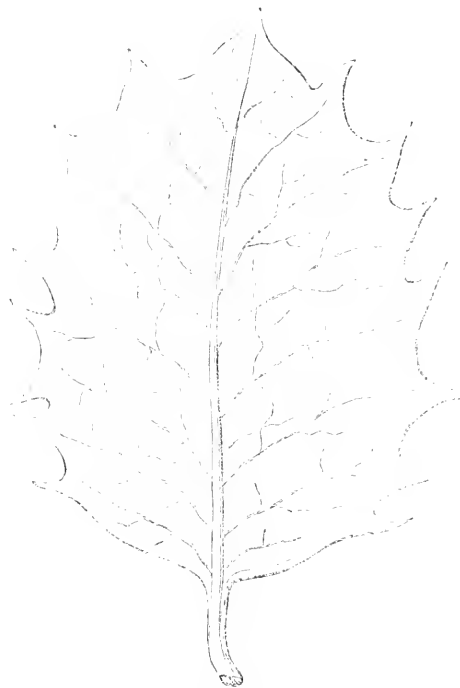
it will, as in the case of sweet bays, enonymus, etc., be years before fine specimens can be again got up. We must live in hope, and be thankful that we have so many handsome evergreens, which neither the excessive wet nor subsequent frost have injured in the slightest. Lastly, let me add, as a rare beauty, *Ilex Sheppardii*, of which I have two beautiful specimens,



SHEPPARDII.

of different degrees of interest are *dipyrena* the two-seeded holly, *laxiflora*, which produces its flowers in loose bundles, *opaca*, *recurva*, and *vornitoria*. *Ilex latifolia*, with leaves of immense size, regularly serrated, and disposed in the most regular manner, was one of the noblest of our hardy evergreen shrubs. Alas ! that we should say "was ;" the last winter cut the trees to pieces, and though it is not lost,

supplied four years since by Mr. Standish I have nowhere met with this, and it is evidently but little known. The leaves are large, broad, distinctly spined, and their colour is deep blue green, distinct altogether from what we commonly understand by "dark green," and the growth is as quick as the quickest of this slow family. The habit of this holly is to form rather diffusely spreading bushes, as it continually



CHESHUNTENSIS.

pushes out new lateral growth, and the density and distinctness of the foliage, combined with its peculiar colour, render it a very striking plant to mix in a belt of evergreen shrubs.

It must be remembered, that mere outlines of leaves, though useful for identification, give no idea of the characters of the kinds as ornamental trees. The splendid green of *nobilis*, the high varnish of *Donningtonensis*, and the sparkle of *Cheshuntensis* have nothing to surpass them, and few things to equal them, among the colours and forms of hardy shrubs.

The accompanying figures show the natural size of the leaf of each kind figured. Descriptions of each are not wanted, as, with the exception of the foregoing remarks on certain distinct kinds, there is little beside the form of the leaf on which remarks might be made. Probably this exhibition of green holly leaves will be of considerable interest to our readers. Next month we shall present a similar collection of the most distinctly formed and coloured of variegated hollies.

SHURLEY HIBBERD.

THE TRUE CAUSE OF THE RECENT MORTALITY AMONG TREES.

In the current number of the *FLORAL WORLD* I beheld a list of shrubs which have stood the severity of the weather, and of those which have been destroyed, and of those yet doubtful, coupled with some wholesome advice as to turning past experience to account, in present or future operations, which advice all whom it may concern would do well to follow. But I am rather surprised that all who speak of the destruction so loudly lamented, attribute it all to the frost. In the early part of the year 1855, we had seven weeks continued frost, the thermometer frequently registering 20° below freezing point, and once (I forget the exact date), the register stood at 6° above zero, only two degrees above that registered on the morning of December 25th, 1860, on the same spot, and yet the destruction committed that winter was as nothing compared to this; and why? for taking the amount of frost

into consideration, the balance would leave the past winter not so very severe after all, compared with some which have spared the bays and laurestinas. In the summer and autumn of 1854, vegetation had an opportunity of making a healthy growth, and of ripening the wood before the severe weather set in; and I am inclined to think that not one only but two causes have produced the terrible destruction among shrubs and garden subjects generally. The essentials for promoting a free, healthy growth, are light, heat, and moisture, an excess or deficiency of either will cause bad health, or promote disease in plants, shrubs, or trees. Last year we had a deficiency of the two former, and an excess of the latter; incessant clouds obstructed the sun's rays, and prevented the ground getting even warm; incessant rains kept the soil cold and clammy; trees and shrubs could make little or no root-action; they became filled

with sap which they had no power to transform, every stem became a bundle of water-pipes or vessels filled with juices, which the plant or tree had not power either to appropriate or reject. In this state severe frost overtook them, and they burst, as water-pipes do when frozen while filled with water. The stems of euonymus,

lanrestinus, cystuses, or all shrubs which have been killed by frost, will, in nineteen cases out of twenty, be found to be split or burst; they were too sappy, juicy, unhealthy; the frost did but give the finishing stroke; it would not have killed them had they been dry and healthy.

Stamford Hill.

F. CURTIS.

BEDDING PELARGONIUMS GROWN AT CHISWICK, 1860.

THE subjoined report by Mr. T. Moore, F.L.S., F.R.H.S., Secretary to the Society's Floral Committee, is of such obvious value and importance as bearing on a class of plants more extensively grown for decorative purposes than any other, that we have thought it best to present it to our readers entire, instead of following our usual plan of condensation. The readers of the FLORAL WORLD will see by this report that many of the varieties hitherto considered of first-class excellence are now surpassed, and must be content with a second place, as compared with those that, to a certain extent, supersede them.

The following is a summary of the varieties which the Committee adjudged to be the most desirable for cultivation:—

Series I.—PLAIN-LEAVED SCARLET PELARGONIUMS.

§ 1. *Flowers scarlet*: Frogmore Improved, and Punch. Defiance and Wellington Hero, in addition, were commended for pot-culture and for training up conservatory pillars. § 2. *Flowers cerise*: Beauté de Meloise, Lady Middleton, Le Titien. § 3. *Flowers rose pink*: Christina, Rose Queen. § 4. *Flowers white*: The only variety of this colour was considered inferior.

Series II.—HORSE-SHOE-LEAVED SCARLET PELARGONIUMS.

§ 1. *Flowers scarlet*: Baron Hugel, Captivation, Lilliput, Martin Gireau, Queen of England, Scarlet Perfection; Bishopstowe, Conway's Royalist, and New Globe were selected as good secondary sorts; while Amazon, British Flag, Compactum, and Richmond Gem were commended for pot-culture or pillars. § 2. *Flowers cerise*: François Chardine, Mons. Martin, Rubens, and Sheen Rival; and for pot culture, Paul Labbé. § 3. *Flowers salmon or flesh colour*: Prince Louise of Hesse; and for pot-culture, Aurora and Blackheath Beauty. § 4. *Flowers rose-pink*: None of the varieties in this group

were considered of first-rate character. § 5. *Flowers blush with pink centre*: Henri de Beaudot. § 6. *Flowers white*: Madame Vaucher, and Nivea floribunda.

Series III.—NOSEGAY PELARGONIUMS.

These all have zonate leaves. The best sorts were Crystal Palace, Imperial Crimson, Pink Nosegay, and Red Nosegay. Of good secondary sorts, of larger growth, there were:—Bishopstowe Nosegay, Purple Nosegay, and Salmon Nosegay.

Series IV.—IVY-LEAVED PELARGONIUMS.

These were all considered to be useful bedding plants for various purposes.

Series V.—VARIEGATED-LEAVED PELARGONIUMS.

§ 1. *Leaves golden-edged*: Golden Chain and Lady Cottenham were pronounced to be useful varieties. § 2. *Leaves silver or cream-edged*: Of the scarlet-flowered sorts, Annie, Alma, Bijou, Burning Bush, Countess of Warwick, Julia, Perfection, Scintillatum; and for pot-culture, Picturatum. Of those with cerise-scarlet or rosy-tinted blossoms: Flower of the Day and Flower of Spring, both first-class sorts. Besides the foregoing, Lilac variegated and St. Clair, both with pink flowers, were considered useful varieties of secondary rank. The varieties having the whitest-edge foliage were:—Alma, Bijou, Jane, Mrs. Lennox, Mountain of Light, Mountain of Snow, and Perfection.

Series VI.—HYBRID BEDDING PELARGONIUMS.

The varieties of this group did not succeed as bedding plants in 1860.

In the following brief descriptions of the varieties, habit and colour are the chief points to which attention has been directed:—

Series I.—PLAIN-LEAVED SCARLET PELARGONIUMS.

§ 1. *Flowers scarlet*.—1. COLLINSON'S

SCARLET, from Messrs. Fraser. Medium habit; flowers scarlet, in small trusses. Inferior.*

2. DEFLANCE, from Messrs. Fraser. Vigorous habit; flowers large, in fair-sized heads, elevated on long stalks, light scarlet. A good variety for training to the pillars of greenhouse conservatories, or for pots.

3. EMPEROR, from Messrs. Fraser. Vigorous; flowers large, bright scarlet.

4. FROGMORE IMPROVED, from Messrs. Fraser. Medium and compact habit; flowers large and well-formed, in fair-sized trusses, bright scarlet. One of the best sorts grown.

5. GEN. SIR F. WILLIAMS, from Messrs. Low and Co. Rather vigorous in habit; flowers large, scarlet. Similar to *Punch*, but inferior to it.

6. GOLIATH, from Messrs. Rollisson and Sons. Vigorous; flowers large, well-formed, in good-sized trusses, reddish-scarlet. Inferior.

7. HARKAWAY, from Mr. Taylor. Dwarf, slender habit; flowers narrow-petaled, in small trusses, scarlet. A useful bedding sort.

8. INDISPENSABLE, from Mr. Turner. Dwarf; flowers scarlet, in small trusses. Inferior.

9. LAMARTINE, from Mr. Scott. Medium spreading habit; flowers light scarlet, of good form. Inferior.

10. LITTLE DAVID, from Messrs. Low and Co. Dwarf; flowers scarlet. Inferior.

11. LORD RAGLAN, from Mr. Turner. Medium habit; flowers large and showy, in small trusses, scarlet. Inferior.

12. MAGNUM BONUM, from Mr. Scott. Vigorous; flowers small, in compact trusses, deep scarlet. Inferior.

13. MRS. BLOOMER, from Mr. Taylor. Dwarf compact habit; flowers medium-sized, scarlet. Inferior.

14. PUNCH, from Messrs. Fraser and Mr. Taylor. Rather vigorous in habit; flowers large, scarlet. A fine variety for large beds. It appears that there are several distinct seedling forms of this variety, and that the best of them has a small white eye.

15. RIGBY'S QUEEN, from Messrs. Fraser. Vigorous; flowers large, loose, bright scarlet. Inferior.

16. ROYAL DWARF, from Mr. Turner.

* It may be explained that this term has been employed to express briefly the fact that superior sorts of similar character are known. It does not necessarily imply that the varieties to which it is attached are worthless.

Medium habit; flowers medium-sized, in small trusses, scarlet. Inferior.

17. SCARLATINA, from Mr. Turner, Messrs. Fraser, and Messrs. Low and Co. Vigorous; flowers large, in medium-sized trusses, bright scarlet. Inferior.

18. TOM THUMB, from Messrs. Fraser. Medium or dwarfish habit; flowers scarlet. Inferior.

19. WELLINGTON HERO, from Messrs. Fraser. Vigorous habit; flowers large and well formed, in fine trusses, scarlet with white eye. A fine variety for pot culture, and for conservatories.

§ 2. *Flowers verise or rosy-scarlet.*—

20. BEAUTE DE MELOISE, from Messrs. Fraser and Mr. Turner. Moderately vigorous; flowers large, well formed, in good-sized trusses, rosy-scarlet, similar in colour to *Lady Middleton*. A very fine variety, superior to *Le Titien*.

21. JUDY, from Messrs. Fraser. Dwarf; flowers rosy-scarlet. Inferior.

22. LADY MIDDLETON, from Mr. Taylor and Messrs. Fraser. Moderately vigorous, compact habit; flowers large, well formed, abundant, in good-sized showy trusses, rosy-scarlet. An old variety, of good quality.

23. LE TITIEN, from Mr. Turner. Medium habit; flowers finely formed, and growing in compact trusses, better shaped than those of *Lady Middleton*, which they resemble in their rosy-scarlet colour. A useful variety, of excellent properties.

24. LORD JOHN RUSSELL, from Messrs. Rollisson and Sons. Dwarf spreading habit; flowers medium-sized, reddish-scarlet, deeper than the rosy-scarlet of *Lady Middleton*. It was not, however, considered a desirable variety.

§ 3. *Flowers rose-pink.*—25. CHRISTINA, from Mr. Kinghorn and Messrs. Low and Co. Moderately dwarf; flowers freely produced in fair-sized trusses, deep rose-pink uniformly coloured. It is deeper coloured and dwarfer than *Rose Queen*, and is further distinguished by the absence of white from its upper petals. It is one of the best sorts of its colour.

26. LUCEA ROSEUM, from Messrs. Fraser. Vigorous; flowers pale rose-pink. Inferior.

27. PRINCESS ALICE, from Mr. Ingram. Medium spreading habit; flowers deep rose-pink. Inferior.

28. ROSE QUEEN, from Mr. Kinghorn and Messrs. Rollisson and Sons. Medium habit; flowers medium-sized, in moderate trusses, deep rose-pink with white base to the upper petals. It is one of the best rose-coloured sorts.

29. *ROSEA COMPACTA*, from Mr. Turner. Dwarf compact habit; flowers small, deep rose-pink. Inferior.

§ 4. *Flowers white*.—30. *INGRAM'S WHITE*, from Mr. Scott. Medium spreading habit; flowers white. Inferior.

Series II.—HORSE-SHOE-LEAVED SCARLET PELARGONIUMS.

§ 1. *Flowers scarlet*.—31. *AGATHA*, from Messrs. Rollisson and Sons. Medium habit; leaves boldly zonate; flowers small, in compact trusses, scarlet. Inferior.

32. *AMAZON*, from Messrs. Fraser. Vigorous habit; leaves distinctly zonate; flowers large, well formed, in large compact trusses, on long hairy stalks, light scarlet. A good variety for pillars in conservatories.

33. *BARON HUGEL*, from Mr. Turner, Mr. Taylor, and Mr. Scott. Also known as *Conway's Princess Royal*, and *Dr. Duval*. Dwarf and spreading in habit, with distinctly zonate leaves; flowers medium-sized, in small trusses, scarlet. It appears to be an early and profuse bloomer; and producing bright-coloured foliage, is to be recommended.

34. *BISHOPSTOWE*, from Mr. Turner. Medium habit; leaves boldly zonate; flowers medium-sized, in compact trusses, bright scarlet. A good old sort.

35. *BRITISH FLAG*, from Mr. Turner and Mr. Taylor. Medium spreading habit; leaves distinctly zoned and mottled with green; flower-stalks pale-coloured; flowers large, in medium-sized trusses, light scarlet. It was considered a good and useful variety for in-door culture, in greenhouses and conservatories.

36. *CAPTIVATION*, from Mr. Turner and Mr. Scott. Vigorous habit, with boldly zonate leaves; flowers full size, in bold long-stalked trusses, scarlet. It is similar in character to *Empress of the French*, but the trusses are bolder, and it was pronounced a good variety of the large or vigorous habited series.

37. *CLARISSA*, from Messrs. Rollisson and Sons. Medium habit; leaves distinctly zonate; flowers small, in compact trusses, scarlet.

38. *COMPACTUM*, from the Society's collection. Coarse habit; leaves distinctly zonate; flowers small, in large compact trusses, scarlet; inferior as here grown, but a good variety for in-door culture.

39. *COMPACTUM COCCINEUM*, from Messrs. Fraser. Vigorous habit; leaves boldly zonate; flowers small, in compact

trusses, scarlet; similar to *Royalist* and *Bishopstowe*, but not so bright in colour.

40. *CONWAY'S ROYALIST*, from the Society's collection. Medium habit, rather spreading; leaves boldly zonate; flowers small, in compact trusses, bright scarlet: it is similar to *Bishopstowe*, but rather dwarfer, and is a useful variety.

41. *COTTAGE MAID*, from Mr. Scott. Medium habit; leaves boldly zonate; flowers medium-sized, scarlet. Inferior.

42. *EMPRESS OF THE FRENCH*, from Mr. Turner and Messrs. Low and Co. Vigorous habit, with boldly zonate leaves; flowers large, in bold trusses, scarlet. The variety is rather coarse, and was considered inferior to *British Flag*.

43. *FIRE QUEEN*, from Mr. Scott. Medium habit; leaves indistinctly zonate; flowers scarlet, of medium size, loose. An inferior sort.

44. *GENERAL PELLISSIER*, from Messrs. Fraser and Mr. Scott. Medium habit; leaves distinctly zonate; flower-stalks pale; flowers medium-sized, tolerably well formed, in moderate trusses, scarlet. Inferior.

45. *GLORY OF SOMERSET*, from Mr. Scott. Medium habit; leaves zonate. This variety did not flower, but is said to be a dark scarlet with white eye.

47. *IVERY'S PET*, from Mr. Scott. Medium habit; leaves boldly zonate; flowers medium-sized, scarlet. Inferior.

47. *LILLIPUT*, from Mr. Turner. Very dwarf; leaves small, with distinct dark zone; flowers medium-sized, very bright scarlet. This variety proved to be a little gem.

48. *MARTIN GIREAU*, from Messrs. Rollisson and Sons. Vigorous; leaves distinctly zonate; flowers large, in bold long-stalked trusses, light scarlet. A good variety, with fine bold inflorescence.

49. *NEW GLOBE*, from Messrs. Fraser. Vigorous habit; leaves boldly zonate; flowers small, in compact trusses, bright scarlet. In the way of *Bishopstowe*. The foliage is fine, and the colour of the flowers good.

50. *ORION*, from Messrs. Low and Co. Medium habit; leaves boldly zonate; flowers medium-sized, loose, scarlet. Inferior.

51. *QUEEN OF ENGLAND*, from Mr. Scott. Vigorous, with boldly zonate leaves; flowers large, of good shape, produced in fair-sized trusses, bright scarlet. A variety of good properties. The same variety was received under the name of *Excellence*, apparently a misnomer.

52. *REIDII*, from Messrs. Fraser. Me-

dium habit; leaves boldly zonate; flowers scarlet. This variety was not well in flower, but was considered inferior.

53. RICHMOND GEM, from Messrs. Fraser and Mr. Scott. Vigorous habit; leaves slightly zonate, mottled with green; flowers light scarlet, rather loose; it is, however, a fine pot plant.

54. ROI DE FER, from Messrs. Rollisson and Sons. Medium habit; leaves boldly zonate; flowers small; in compact trusses, very bright scarlet. In the way of *Bishopstowe*, but no improvement.

55. SCARLET GLOBE, from Messrs. Rollisson and Sons and Messrs. Low and Co. Medium habit; leaves zoned; flowers large, in fair-sized trusses, bright scarlet. Inferior.

56. SCARLET PERFECTION, from Mr. Turner. Also called *Attraction* and *Boule de Feu*. Medium habit; leaves faintly zonate; flowers in fair-sized trusses, bright scarlet. It is a very fine variety.

57. SCARLET UNIQUE, from Mr. Ingram. Medium habit; leaves distinctly zonate, and marbled with green; flower-stalks pale; flowers small, in small trusses, scarlet. Inferior.

58. SHRUBLAND SCARLET, from Mr. Taylor. Vigorous habit; the leaves faintly zonate; flowers scarlet, in large showy heads. A variety called *Eclipse*, sent by Messrs. Fraser, appeared to be the same as this.

59. VILLAGE MAID, from Messrs. Low and Co. Vigorous, with boldly zonate leaves; flowers medium-sized, in moderate trusses, rather loose, scarlet. Inferior.

§ 2. *Flowers cerise or rosy-scarlet.*—

60. BEAUTY OF THE PATERRE, from Messrs. Fraser. Medium habit, with indistinctly zonate leaves; flower-stalks pale; flowers small, in compact trusses, of a lively rosy-scarlet. Inferior.

61. CERISE UNIQUE, from Messrs. Fraser. Medium habit; the leaves slightly zonate; flowers small, cerise-scarlet. Inferior.

62. COMTE DE MORNAY, from Messrs. Low and Co. Dwarf; leaves indistinctly zonate; flowers well-formed, in fair-sized trusses, lively cerise or rosy-scarlet. Inferior.

63. EMPEROR, from Mr. Turner. Dwarf and vigorous; with boldly zonate leaves; flowers in small trusses, rosy-scarlet. Inferior.

64. FRANÇOIS CHARDINE, from Messrs. Fraser and Messrs. Low and Co. Medium habit; with boldly zonate leaves; flowers large, well formed, in medium-sized trusses, deep rosy or salmon-scarlet. A fine

variety, near to *Mons. Martin*, but having better foliage.

65. LADY DOROTHY NEVILL, from Messrs. Rollisson and Sons. Dwarf spreading habit; leaves distinctly zonate, and mottled with green; flower-stalks pale; flowers above medium size, rather quartered, rosy- or cerise-scarlet. Inferior.

66. LEONI, from Messrs. Rollisson and Sons. Medium habit; leaves distinctly zonate; flowers large, in moderate-sized trusses, cerise- or rosy-scarlet. A promising variety, but not well flowered.

67. MONS. AUGUST, from Messrs. Rollisson and Sons. Medium habit; leaves distinctly zonate; flowers large, well formed, rosy- or cerise-scarlet. A promising variety.

68. MONS. DESCHAMPS, from Messrs. Rollisson and Sons. Dwarf; leaves distinctly zonate; flowers well formed, cerise-scarlet. Inferior.

69. MONS. MARTIN, from Messrs. Rollisson and Sons, Mr. Turner, and Messrs. Fraser. Medium habit; leaves distinctly zoned; flowers large, well formed, in compact trusses, of a lively rosy-scarlet, or bright cerise-scarlet, like *Lady Middleton*. This is a fine sort in the way of *Rubens* and *Lady Middleton*, and one well deserving of cultivation.

70. PAUL LABBÉ, from Messrs. Fraser. Medium and somewhat erect habit; leaves distinctly zonate; flowers of good size and fine form, but produced in small trusses, rosy-salmon. A fine variety for pots.

71. PICTURATUM, from Mr. Hally. Medium habit; leaves indistinctly zonate; flowers deep rose. This variety scarcely came into bloom.

72. RUBENS, from Mr. Taylor. Moderately vigorous; leaves zonate; flowers large, of fine form, produced in good-sized compact trusses, cerise-pink. A fine variety for all purposes.

73. SHEEN RIVAL, from Mr. Kinghorn. Medium and somewhat spreading habit, with distinctly zonate leaves; flower-stalks pale; flowers large, well formed, in bold compact trusses, cerise-scarlet. One of the best varieties in cultivation.

74. SURPRISE, from Mr. Turner. Dwarf, with zonate leaves, distinctly marked with mottled green; flowers medium-sized, in compact trusses, rosy-scarlet. Inferior.

75. TALMA, from Messrs. Rollisson and Sons. Medium habit; leaves slightly zonate; flowers rosy-scarlet.

76. THE BISHOP, from Mr. Scott. Medium habit; a very distinct variety, the leaves green, with a yellowish-green centre, and a dark zone; flowers large, in large

trusses, rather loose, rosy-scarlet; they are produced on pale-coloured stalks. Though a distinct sort, it is of inferior properties.

§ 3. *Flowers salmon or flesh-colour.*—77. **ACRORA**, from Mr. Hally. Dwarf; leaves distinctly zonate; flowers deep salmon-pink, not well developed. The variety is evidently not adapted for open air culture in such a season as the past, though a very beautiful object for pot culture.

78. **BLACKHEATH BEAUTY**, from Mr. Hally. Dwarf; leaves distinctly zonate; flowers pinkish-blush. This, like *Aurora*, is a beautiful little plant for pot culture, but in seasons like the past is not suited for bedding.

79. **CHERRY CHEEK**, from Mr. Taylor. Vigorous; leaves large, zonate; flowers medium-sized, deep salmon-pink. Inferior.

80. **CHIONE**, from Messrs. Rollisson and Sons. Medium habit; leaves distinctly zonate; flowers medium-sized, flesh-colour. Inferior.

81. **CRITERION**, from Mr. Taylor, Mr. Scott, and Mr. Turner. Moderately vigorous habit; leaves large, distinctly zonate; flowers well formed, in compact trusses, flesh-colour or blush. Ineffective, and evidently not suited for out-door culture in seasons like the past.

82. **PRINCE LOUIS OF HESSE**, from Mr. Ingram. Medium habit, with the erectish growth of *Paul Labbé*; leaves distinctly zonate; flowers large, well formed, salmon-red, paler towards the edges. This, which was sown as Seedling A, was pronounced a first-class variety of the salmon-coloured series. Mr. Ingram states that it is very pretty when grown in the shade.

83. **KINGSBURY PET**, from Mr. Turner, Messrs. Fraser, and Mr. Scott. Medium habit; leaves distinctly zonate; flowers of good form, produced in fair-sized trusses, salmon or pinkish flesh-colour. A good variety for pot culture, but not equal to *Aurora*.

84. **LADY EMILY STANLEY**, from Mr. Turner. Medium habit; leaves boldly zonate; flowers flesh-colour, in small trusses. Inferior.

85. **MADAME CHARDINE**, from Messrs. Low and Co. Medium habit; leaves distinctly zonate; flowers rosy-salmon. Inferior.

§ 4. *Flowers rose-pink.*—86. **AMY**, from Messrs. Rollisson and Sons. Medium habit; leaves with distinct dark zone; flowers rose-pink, white on the upper petals. A very poor and inferior sort.

87. **FROGMORE SEEDLING**, from Mr. Taylor. Medium compact habit; leaves distinctly zonate; flowers narrow-petaled, deep rose-pink. Inferior.

88. **INGRAM'S SEEDLING**, from Mr. Ingram. Medium habit; leaves faintly zonate; flowers small, rose-pink. Inferior.

89. **MINNIE**, from Messrs. Rollisson and Sons. Medium habit; leaves distinctly zonate; flowers medium-sized, in moderate trusses, deep rosy-pink, white on the upper petals. Inferior.

90. **PRINCESS ROYAL**, from Mr. Ingram. Dwarf compact habit; leaves faintly zonate; flowers small, deep rose-pink, with white on the upper petals. Inferior to others of this colour.

91. **TOM THUMB'S BRIDE**, from Mr. Turner. Dwarf, with slightly zonate leaves; flowers small, in small trusses, deep rose-pink, with white on the upper petals. Not equal to *Rose Queen*.

§ 5. *Flowers blush, with pink centre.*—92. **ANTHONY LAMOTTE**, from Messrs. Low and Co. Medium habit; leaves boldly zonate; flowers medium-sized, of good form, in small close trusses, whitish, with pink centre. Not equal to *Henri de Beaudot*, and paler in colour.

93. **COMTE DE MORNY**, from Messrs. Low and Co. Medium habit; leaves distinctly zonate; flowers small, in small close trusses, whitish, with salmon-pink centre. This was similar to *Antony Lamotte*, and quite distinct from another variety under a similar name, also contributed by Messrs. Low.

94. **HENRI DE BEAUDOT**, from Messrs. Low and Co. Moderately vigorous in habit; leaves distinctly zonate; flowers medium-sized, in moderate-sized trusses, of good form, whitish, with a large distinct salmon-red centre. The best of the salmon-eyed light varieties.

95. **LA COQUETTE**, from Messrs. Rollisson and Sons. Dwarf; the leaves slightly zonate; flowers blush-white, of a deeper blush at the eye. Inferior.

96. **SKELTONI**, from Mr. Turner, Messrs. Fraser, and Mr. Scott. Dwarf; the leaves distinctly zonate; flowers small, in small trusses, white, with blush centre. Inferior.

§ 6. *Flowers white.*—97. **AUBER HENDERSON**, from Mr. Scott. Dwarf; leaves slightly zonate; flowers white, of tolerably good form. It is now surpassed by other white varieties.

98. **BOULE DE NEIGE**, from Mr. Turner. Moderately vigorous habit; leaves distinctly zonate; flowers small, of good form, white, a good variety, but inferior to *Madame Vaucher*.

99. **LADY TURNER**, from Mr. Scott. Moderately dwarf habit; leaves distinctly zonate, white; not well developed.

100. **MADAME VAUCHER**, from Messrs. Low and Co. Medium habit; leaves dis-

tinctly zonate; flowers of moderate size, well formed, produced in compact trusses, white. This was adjudged to be one of the best white sorts.

101. MISS EMILY FIELD, from Mr. Scott. Dwarf; leaves faintly zoned; flowers bluish-white. Inferior.

102. NIVEA FLORIBUNDA, from Messrs. Rollisson and Sons. Dwarf; leaves with distinct dark zone; flowers in medium-sized compact trusses, well formed, white. A good white variety, but not considered equal to *Madame Vaucher*.

The following sorts did not produce flowers:—

103. AMY ROBSART, from Messrs. Rollisson and Sons. Dwarf; leaves slightly zonate.

104. IMPÉRATRICE EUGÉNIE, from Messrs. Low and Co. Medium habit; leaves with a distinct zone.

105. PREMIÈRE, from Messrs. Rollisson and Sons. Vigorous and coarse habit; leaves distinctly zonate.

106. ROYALIST, from Messrs. Fraser. Leaves indistinctly zoned.

Series III.—NOSEGAY PELARGONIUMS.

107. BISHOPSTOWE NOSEGAY, from Mr. Taylor. Vigorous; leaves large, faintly zoned; flowers rosy-erimson, in large bold trusses. It is a good large growing sort, but was considered rather coarse.

108. CRYSTAL PALACE, from Mr. Taylor. Dwarf and compact; leaves prettily marked with a narrow distinct dark zone; flowers small, pink. The flowers were not well developed, but its dwarf habit and very pretty foliage are sufficient to recommend it as a desirable variety in this section.

109. FREWER'S NOSEGAY, from Mr. Taylor. Medium compact habit; leaves zoned; flowers small, rose-coloured, in small trusses, which are not well filled.

110. IMPERIAL CRIMSON, from Mr. Turner. Medium habit; leaves faintly zoned; flowers loose, produced in moderate-sized heads, deep rosy-erimson. One of the best of the nosegay section.

111. MODEL NOSEGAY, from Mr. Turner. Vigorous habit; leaves faintly zoned; flowers loose, in large heads, rose-colour. This was considered too coarse in habit.

112. PINK NOSEGAY, from Mr. Taylor and Messrs. Fraser. Medium habit; leaves neatly zonate; flowers large, bright rose, in moderate-sized trusses. This is a fine variety, with flowers larger than in any other Nosegay variety grown in the collection.

113. PURPLE NOSEGAY, from the So-

ciety's collection. This was also received under the name of *Mrs. Vernon* and *Mrs. Colville*. Vigorous; leaves large, zonate; flowers bright rose-colour, in good trusses, but they were not well developed. It is, however, a good large growing sort, though somewhat coarse.

114. RED NOSEGAY, from Mr. Taylor. Medium habit; leaves bright green, with faint zone; flowers reddish-erimson, in good-sized trusses. A variety of good habit, and one of the best in this section.

115. SALMON NOSEGAY, from Mr. Taylor. Vigorous; leaves large, zonate; flowers salmon-pink, in large trusses. It is a distinct large sort, somewhat coarse.

Series IV.—IVY-LEAVED PELARGONIUMS.

These are all of spreading habit, and have loose narrow-petaled flowers. They are useful bedding sorts.

116. GOLDEN IVY-LEAVED, leaves having a motley edging of yellowish-green and zonate.

117. SCARLET, OR CRIMSON IVY-LEAVED, from Messrs. Fraser. Leaves green; flowers loose, rosy-erimson.

118. VARIEGATED IVY-LEAVED, from Messrs. Fraser. Leaves cupped, silver-edged; flowers lilac.

119. VARIEGATED CRIMSON IVY-LEAVED, from Messrs. Low and Co. Leaves cupped, silver-edged; flowers pink.

120. WHITE IVY-LEAVED, from Messrs. Fraser. Leaves green, slightly blotched in the centre; flowers large, white.

Series V.—VARIEGATED-LEAVED PELARGONIUMS.

§ 1. *Leaves golden or yellowish edged.*
—121. GOLDEN CHAIN, from Mr. Scott. Leaves flat, golden-edged; not in flower. Well known as one of the most useful bedding sorts for special purposes.

122. LADY COTTENHAM, from Mr. Turner and Mr. Scott. Medium habit; leaves flat with yellowish green edge, and faintly zonate; flowers deep pink, or rose-colour. A useful sort.

§ 2. *Leaves silvery, or creamy-edged.*
—*Flowers scarlet.*—123. ALMA, from Mr. Scott, Mr. Turner, Mr. Taylor, and Messrs. Fraser. Medium habit; leaves broad, flattish, white-edged; flowers medium-sized, in compact trusses, deep reddish scarlet. A first-class variety.

124. ANNIE, from Mr. Kinghorn. Dwarf compact habit; leaves with a whitish edge; flowers large, light orange-scarlet, rather loose. It is one of the

more desirable varieties, similar to that called *Flower of the Day*, but having better foliage.

125. **BLIOUT**, from Messrs. Low and Co., Messrs. Fraser, and Mr. Turner. Medium habit; leaves rather convex, white-edged; flowers large, well-formed, bright scarlet. This is one of the finest varieties in cultivation, and was considered to be quite A 1.

126. **BRILLIANT**, from Mr. Taylor. Medium habit; this, which is a variegated sport from *Tom Thumb*, has leaves slightly edged with white, the edge more or less abortive; flowers bright scarlet. It is a useful sort.

127. **BURNING BUSH**, from Mr. Hally. Dwarf; leaves convex, edged with creamy-white, and zoned with dark red, pinkish on the younger parts; flowers of good form, in fair trusses, medium-sized, light scarlet. A very excellent variety.

128. **COUNTESS OF WARWICK**, from Mr. Kinghorn, Messrs. Low and Co., and Messrs. Fraser. Medium habit; leaves rather cupped, silver-edged, with distinct dark zone; flowers medium-sized, in compact trusses, bright scarlet. It is one of the best varieties, and is good either for beds or pot culture.

129. **JANE**, from Mr. Turner. Vigorous, with spreading one-sided habit of growth; flowers large, well-formed, light scarlet. It is, however, inferior to other sorts.

130. **JULIA**, from Mr. Turner. Medium habit; leaves having a creamy edge; flowers medium-sized, in good trusses, scarlet. A distinct and good variety.

131. **MOUNTAIN OF LIGHT**, from Messrs. Fraser. Medium habit; leaves convex, white-edged; flowers scarlet. Inferior.

132. **MRS. LENNOX**, from Mr. Taylor. Medium habit; the growth rather one-sided; leaves with distinct white edge; flowers bright scarlet, in small trusses. It was considered to be inferior to *Alma*.

133. **PERFECTION**, from Messrs. Low and Co. Medium habit; leaves flattish with broad white edge, and mottled green surface; flowers of tolerable form, in fine trusses, bright light scarlet. A variety of good properties.

134. **PICTURATUM**, from Mr. Turner. Medium habit; leaves with a creamy edge and zoned with red; flowers of medium size, in compact trusses, scarlet. A pretty variety for pot culture, but apparently not suited for beds.

135. **SCARLET VARIEGATED**, from Mr. Taylor. Medium habit; leaves cupped,

with creamy or slightly silvered edge, flowers loose, crimson scarlet.

136. **SCINTILLATUM**, from Mr. Hally. Medium habit; leaves cupped, creamy silver-edged, and dark zoned; flowers well formed, of medium size, and produced in good trusses, deep scarlet. It is a very beautiful variety.

** *Flowers cerise, or light rosy-scarlet.*

137. **ATTRACTION**, from Mr. Kinghorn. Leaves creamy-edged, and zonate; flowers cerise-scarlet; not in good condition.

138. **BRIDAL WREATH**, from Mr. Turner and Mr. Scott. Medium habit; leaves white-edged; flowers rosy-scarlet, above medium size. Inferior.

139. **FAIRY NYMPH**, from Mr. Turner. Medium habit; leaves rather cupped, white-edged; flowers cerise-scarlet, in small trusses. An inferior variety.

150. **FLOWER OF THE DAY**, from Messrs. Fraser. Medium habit; leaves rather cupped, creamy-edged; flowers light or cerise-scarlet, of medium size, and good form, in fair-sized trusses. A good old useful sort.

141. **FLOWER OF SPRING**, from Mr. Turner. Moderately dwarf habit; leaves silver-edged, and mottled with green; flowers large, of extra fine form, rosy-tinted scarlet. This is a first-class variety, fine every way.

142. **MOUNTAIN OF SNOW**, from Messrs. Fraser. Medium habit; leaves concave, white-edged; flowers large, well formed, light salmony scarlet. A useful variety.

143. **SHOTTESHAM PET**, from Mr. Turner. Moderately vigorous; leaves cupped, silver-edged; flowers medium-sized, cerise-scarlet. Inferior.

144. **VARIEGATED TOM THUMB**, from Mr. Scott. Dwarf; leaves white-edged; flowers small, cerise-scarlet. It is too small to be effective.

*** *Flowers reddish crimson.*

145. **LADY GRANVILLE**, from Mr. Taylor. Moderately vigorous; leaves cupped, slightly silver-edged; flowers loose, reddish-crimson. Inferior.

**** *Flowers pink.*

146. **LILAC VARIEGATED**, from Mr. Taylor. Moderately vigorous; leaves cupped, slightly silver-edged; flowers pink, loose, in trusses of considerable size. A distinct and useful old-fashioned sort. It was received under the name of *Peach Blossom* from Messrs. Low and Co.

147. **ST. CLAIR**, from Mr. Turner, Mr. Taylor, and Mr. Scott. Moderately vigo-

rous in growth; leaves cupped, white-edged; flowers rose-pink, in compact trusses, rather indifferent in form. It is, however, distinct, and useful as a rose-coloured variegated-leaved sort.

118. SILVER QUEEN, from Mr. Taylor, Messrs. Low and Co., and Mr. Turner. Medium habit; leaves flattish, white-edged; flowers loose, pink, distinct in colour, but inferior.

The following did not produce flowers:

119. FAIRY NYMPH, from Mr. Scott. Leaves silver-edged, indistinctly zonate.

150. KOH-I-NOOR, from Mr. Scott. Dwarf, the plant being weakly in habit;

leaves silver-edged. Described as a bright scarlet.

Series VI.—HYBRID BEDDING PELARGONIUM.

This name is applied to a group having more or less resemblance in habit, foliage, and blossoms to the classes of show and fancy kinds. There are some interesting and useful varieties in this section, but during the last season they scarcely came into bloom, and they are evidently not adapted for bedding out in seasons like that of 1860. Some of them form fancy pot plants suitable for decoration.

THE BEST DAHLIAS OF 1861.

Marquis of Bowmont.—Large pale lilac tinted rose, paler centre. Mr. Dodds. First class certificate, Horticultural Society, Floral Committee; certificate, Crystal Palace, September 19.

Masterpiece.—Small compact, neatly formed high centre, shaded purple and maroon, a very pretty flower. Mr. Keynes, Salisbury. Commended by Horticultural Society's Floral Committee, September 13; certificate, Crystal Palace, September 19.

Norah Creina.—Bronze yellow, lightly tipped with white, back of the petals suffused with rosy-lilac, full size, well formed, quite novel. Mr. C. Turner. Commended by Horticultural Society's Floral Committee, September 13.

Elegance.—White, suffused on the margin with light purple, and striped crimson, one of the purest of the white striped varieties exhibited this season. Mr. C. Turner. Commended by Horticultural Society's Floral Committee, September 13.

Joy.—Pale lilac tipped, bright purplish

rose, good outline, florets cupped, centre low. Mr. G. Rawlings. Certificate, Crystal Palace, September 20; commended by Horticultural Society's Floral Committee, September 6.

Mrs. Dodds.—Clear yellow, large, bold outline, fine centre; a most acceptable variety, good yellows being still scarce. Mr. W. Dodds, gardener to Col. Baker, Salisbury. First class certificate, Horticultural Society's Floral Committee, Aug. 23.

Andrew Dodds.—Large cupped deep maroon purple, very bold and showy. Mr. Keynes. First class certificate, Horticultural Society's Floral Committee, August 23; certificate, Crystal Palace, September 19.

Beauty of Hilperion.—Large bold flower, crimson, edged with lilac, good centre. T. Dickenson, gardener to R. J. Edwards, Esq. Certificate, Crystal Palace, September 19.

THE BEST FUCHSIAS OF 1861.

Lord John Russell.—Short broad red sepals, corolla violet, large, and cup shaped. E. Banks. Horticultural Society's Floral Committee, July 26. No award.

Prince Arthur.—Similar to Lord John Russell, but with larger sepals, the base of the petals streaked with red. E. Banks. Horticultural Society's Floral Committee. July 26. No award.

Frank Vine.—Corolla reddish slate, like Garibaldi, but less expanded; flowers finely textured and habit very free and effective. E. Banks. Horticultural So-

ciety's Floral Committee, July 26. No award.

Purity.—Clear white sepals, purplish rose corolla, an average flower. E. Banks. Horticultural Society's Floral Committee. July 26. No award.

Prince Leopold.—Flowers large, sepals red, of moderate length, stout, corolla violet purple, cup-shaped, expanded, segments concave, and over-lapping, and nearly one and a-half inches across. A grand flower, and the plant of first-rate habit. E. Banks. Horticultural Society's

Floral Committee, July 26. First class certificate.

Lord Elcho.—Like Prince Leopold, yet distinct, sepals longer, and more inclining to vermilion, corolla longer, violet purple, showy. Horticultural Society's Floral Committee, July 26. First class certificate.

Minnie Banks.—Sepals white, faintly tinged with blush; petals rosy purple; flower large, well proportioned; an improvement on the light kinds. E. Banks. Horticultural Society's Floral Committee. July 26. First class certificate.

Garibaldi.—Sepals bright red, short, broad, reflexed; corolla pale reddish slate, A well-proportioned, novel, and effective.

flower, but wanting in smoothness. E. Banks. Horticultural Society's Floral Committee, July 26. Commended.

Negro.—Sepals narrow, bright red; corolla large, expanded, deep rich reddish purple; rather out of proportion in build, but very showy, and the plant a profuse bloomer. G. Smith. Horticultural Society's Floral Committee, July 26. Commended.

Pyramidalis.—Dwarf habit, free blooming; a very showy flower for garden and market purposes. A. Kendall, Stoke Newington. Horticultural Society's Floral Committee, September 6. No award.

THE BEST PELARGONIUMS OF 1861.

Reading Volunteer.—Upper petals clouded with dark maroon, lower petals blotched with crimson, centre white. A fine early, high-coloured geranium. G. W. Hoyle, Esq., Royal Botanic, April 4, second class certificate.

Flower of Spring.—An improved Flower of the Day; leaves edged with creamy white, and blotched with gray, flowers cerise scarlet and in good bold trusses. C. Turner, Royal Botanic, April 4, first class certificate.

Argus.—Silver-edged bedding geranium; the leaf marked with zone of red; trusses bright scarlet. Horticultural Society's Floral Committee, August 9, first class certificate.

Arabella Goddard.—Clear rose; a cheerful well-formed flower; will be a favourite. Royal Botanic, May 30, certificate; Crystal Palace, May, first prize.

Meteor (Horse-shoe Geranium).—Vigorous habit, flowers bright scarlet, white eye. Distinct from another Meteor in this list. F. and A. Smith. Horticultural Society's Floral Committee, September 13, no award.

Prince of Orange.—Scarlet; average merit. Crystal Palace, May 26, second class certificate.

Meteor.—Variegated bedding geranium, dwarf habit, leaves margined creamy white, good trusses of scarlet flowers. Parker and Williams, Horticultural Society's Floral Committee, July 26, commended.

Champion.—Certificate of merit, Royal Botanic, May 30.

Lord Althorp.—First class certificate. Royal Botanic, July 4.

Henri de Beaudot.—Medium-sized foliage, flowers salmon, margined white; a

neat and pretty conservatory plant. Horticultural Society's Floral Committee, September 13, no award.

Blackheath Beauty.—Hally, Blackheath, Royal Botanic, May 30, certificate.

Madam Cilly.—A small-growing variety in the way of Delicatum; neat habit leaves three-lobed, lemon-scented; flower small rosy lilac pencilled; a ladies' flower. Mr. Bragg, Horticultural Society's Floral Committee, July 23, commended.

Perditie.—White centre, dark top; a smooth and finely-formed flower. Foster, Horticultural Society's Floral Committee, June 28, first class; Royal Botanic, May 30, commended.

Rosa Bonheur.—Rosy crimson, clear white throat; a fine show flower. G. W. Hoyle, Reading. Royal Botanic, June 20, first class certificate.

Beauty of Reiding.—Rich painted crimson; showy, but of no special excellence. G. W. Hoyle, Royal Botanic, June 20, first class certificate.

Princess of Prussia.—Light scarlet geranium of the Compactum habit; fine truss, and well-formed flowers. Mrs. Conway, Earl's Court. Horticultural Society's Floral Committee, July 12, commended.

Garibaldi.—Lower petals rose, top petals dark; large, finely formed. Foster, Royal Botanic, June 20, first class certificate.

General Garibaldi.—Rich deep crimson lower petals, strongly veined, black top petals, even crimson margin, very smooth. One of the best of the new show pelargoniums. Dobson and Son, Royal Botanic, June 20, first class certificate.

Mulberry.—A fine dark, well-built flower. Beck, Royal Botanic, July 4, first class certificate.

SELECTIONS OF HOLLYHOCKS, OLD AND NEW.

In these lists there are none entered but such as are of sterling merit and fit for exhibition, still, as a whole, they will not equal in quality those given in previous issues of the *FLORAL WORLD*. After those previously enumerated, these stand next in the order of merit:—

TWELVE BEST HOLLYHOCKS FOR 1861.

Regina (Chater), clear deep pink; Mr. Roake (Bragg), primrose; Reine Blanch (ditto), pure white; Illuminator (Chater), scarlet carmine; Tyrian Prince (ditto), purple; Mignonette (ditto), soft salmon pink; Mrs. Chater (ditto), pink tinted with carmine; Leonora (ditto), peculiarly shaded; Margaret (Hawke), crimson maroon; Optima (Chater), straw heavily suffused with pink; Lady Helena Stewart (ditto), light rosy crimson; Mary Ann (ditto), rose with silvery edges, fine.

TWELVE BEST HOLLYHOCKS OF 1860 AND PREVIOUS YEARS.

Giant des Batailles Surpass (Chater), vivid crimson scarlet; Black Knight

(Bland), the finest and darkest variety yet out; Excelsior (Chater), fawn heavily suffused with salmon; Lucy (ditto), glowing crimson, amber base; Jaune (ditto), clear yellow; Violet (ditto), beautiful light purple; Colonel Howardbyre (Bragg), crimson red; Disraeli (ditto), crimson maroon; Walden Masterpiece (Chater), lemon and pink; Mont Blanc (ditto), pure white; Pink Noisette (ditto), pink; Tyrian Prince (ditto), deep purple.

TWELVE BEST OLD AND CHEAP HOLLYHOCKS.

Beauty of Walden (Chater), rose carmine; Admirable (ditto), violet, white edges; Queen of Whites (Paul), pure white; Memnon (ditto), crimson; Lu Memoriam (ditto), claret; Purple Perfection (Chater), purple; Queen of Bulls (ditto), buff; Vesper Bell (ditto), pure white, violet base; General Havelock (Paul), crimson scarlet; Shrubland Gem (Chater), clear lilac; Lilac Queen (ditto), lilac blush; Annie (ditto), flesh white; Ceres (ditto), rosy crimson.

GARDEN AND GREENHOUSE WORK FOR MAY.

ANNUALS are held in light estimation because people do not really cultivate them. Thin out the patches and top the branching kinds, and they will bloom so vigorously as to be altogether unlike the crowded spindling things on which people vent their abuse. Quick flowering annuals sown in shady places at the end of the month or early in June, will come into flower for succession to those that are exhausted, and prove of great service.

BEDDING PLANTS to be kept growing till of sufficient size for hardening off, and fresh cuttings put in of those of which the stocks are short. Sorts that are in a fit state for turning out, to be carefully hardened first, as any severe and sudden check will put them back tremendously. Place them in cold pits first and shade from mid-day sun, and cover up at night. By degrees, let them have full exposure, and to be left uncovered night and day before turning out. Plants purchased from nurseries generally require careful hardening, owing to their having been pushed rather fast. In selecting at nurseries, prefer plants from open frames if you can get them.

BEEF of the first sowing to be thinned to one foot apart as soon as large enough. From the 7th to the 14th is early enough to

sow for a crop of moderate-sized roots to store for winter.

BROCCOLI.—Sow the second week, both early and late sorts, not forgetting Snow's Winter White and Lee's New Sprouting.

CAPSICUMS AND TOMATOES may be turned out on warm borders towards the end of the month, but there will be nothing gained by over haste. Tomatoes planted against hot walls should be covered every night till the first week in June.

CAULIFLOWERS.—Give manure water to the forwardest to produce large heads. Sow for the autumn supply.

CELERY.—In pricking out, choose a hard bottom for the bed, on which lay four inches of rotten dung, and two inches of light rich soil. Handle the plants tenderly, water lightly and regularly, and keep the lights over till they look brisk and growing. They will lift from such a bed with vigorous roots, and at the first planting out, choose the forwardest plants and let the others remain for the next set of trenches.

CHRYSANTHEMUMS make nice plants for ordinary purposes from May cuttings, and better without than with bottom-heat.

CINERARIAS going out of bloom to be in cold frames, and the collar of each

plant earthed up with sandy stuff to promote suckers.

CUCUMBERS will require plenty of air and a brisk bottom-heat. Re-line the beds where necessary. Train and thin the shoots. After lining, give plenty of water round the insides of the frames. Sow or strike cuttings for succession. Ridge cucumbers to be planted out under hand lights on trenches two and a-half feet wide, and one foot deep, filled with dung twice turned to a foot above the level. The dung should not be soiled over for a few days after making the bed.

CUTTINGS of all the bedders should be taken as far as they can be spared, either by bushy plants, or to stop leaders of those that ought to be bushy. Always allow the plants cut from to break before disturbing them at the root, as one check is sufficient at a time. Hardy spring flowering plants may be propagated from cuttings as soon as they have flowered, and a stock of Alyssum, Arabis, double Wales, etc., got up very quickly and with less trouble than by sowing seeds.

DAHLIAS should never go out till June, unless to be protected every night with inverted flower-pots, each pot to be covered with a mat. Dahlias should be potted in

rich stuff, to insure strong plants, before planting out, and be gradually hardened. Cuttings put in now will root in a few days, so that sorts of which the stock is small may soon be secured.

EDGINGS newly formed to be watered in dry weather. Saxifraga Icelandic makes a beautiful bright green edging for a close line.

GERANIUMS for exhibition to have frequent and regular attention, the growth to be symmetrical, plants never to lack moisture; not much sun. Bedding geraniums are best from cuttings of the season, the old stools to be thrown away. Make the beds deep and rich with plenty of old dung and good leaf-mould.

GERANIUMS struck now will make fine plants to bloom from July to November. Cuttings of geraniums should now be inserted singly in thumb pots, so as to be ready for shifting to 60's without injury to the roots as soon as large enough.

POTATOES.—Hoe between the rows as soon as the plants appear, and hoe frequently irrespective of weeds and moulding up. If planted deep enough in the first instance, we consider further moulding an injury to them.

TO CORRESPONDENTS.

CATALOGUES RECEIVED.—"Carter's Gardener's and Farmers' Vade-Mecum for 1861." This came to hand so late last month, that we could only acknowledge it on the wrapper. It is a large octavo of 108 closely-printed pages, and worth much more than the shilling charged for it, as a guide-book for the florist, gardener, allotment-holder, and farmer. The farming calendar is as good as anything of the kind in our current literature, and in a space of a few pages conveys as much useful information as would suffice to fill an expensive volume. The list of flower seeds has the usual accompanying notes on culture, and the whole thing reflects on the trade thus represented by its own literature.—"New Roses of 1861, offered by Paul and Son, Old Cheshunt Nurseries." A list of thirty-five new roses offered at 5s. each, and comprising a few names we have not observed in other lists, but on which we shall offer no remarks until we have tried them, or seen the plants in flower.—"Supplement to Catalogue No. 67 of the Horticultural Establishment of A. Verschaffelt, Ghent." A very pretty list of novelties, among which are some rare palms, ferns, cycads, and conservatory flowering shrubs.—"Addenda to Sutton's Farmers' Manual and Seed List," comprising the prices of seeds for present sowing for rotation and fallow crops.

INDIAN SEEDS.—*T. E. P.*—The seeds of lilies sent you from India ought to have vegetated in heat. We can only advise you to wait in hope. Seeds that have made a long voyage are generally a longer time vegetating than those of home growth, and it is rather a rare occurrence for seeds sent privately to come to any good, the donors not generally having sufficient knowledge to know what to send or how to send. If our seeds do grow, the plants will require

greenhouse treatment. Propagate Clematis from firm side-shoots under glasses in June, and grow the plants in pots till next spring. *Jasminum grandiflorum* requires good culture, and a rather warm place; the soil turfy peat and loam. You cannot have a better if you have it true. The *Fraxinella* seeds should be sown as soon as ripe; cover an inch deep, and place a tally to mark the place. The plants will appear next spring, and not before. The seeds ought never to be kept, but sown as soon as gathered. Seeds of *Mezereon* are generally two years in vegetating, and should be treated the same as we have described for holly, in order to rot away the integuments.

SPERGULAS.—*W. P.*—The dark-green tuft you sent is not *Spergula pilifera*, but what it is we cannot say without seeing it in bloom. The true *pilifera* is rather light green, and grows closer to the ground than the tuft sent. We never advised dressing *Spergula* with salt to keep away worms; we may have advised the use of lime-water, and we advise that now, with frequent rolling. We hear from several quarters of the failure of the seeds of *Lawton Blackberry*, and we incline to the belief that the seed is not good. Why not get a few plants, or one even, and propagate by layers or cuttings. The seed should be sown in June.

GERANIUMS AND HYDRANGEAS.—*J. R., Tipperary.*—Your rich soil and moist air ought to suit hydrangeas, so we fear your system must be wrong. That geraniums grow rank in it is quite likely, and that may be corrected by plunging instead of turning out; but mind that under every pot plunged there is a large piece of hollow crock or tile, to prevent worms getting up into the pots, and to keep the drainage safe. But it would be better if you would make your

geranium beds of the poorest soil you have, and raised above the surface to make them drier. A mixture of old mortar and brick rubbish would help to correct the richness of the soil for the scarlets, but it will not be too rich for any of the variegated sorts. Placing pots in saucers is not a good plan, except for plants exposed to a hot sun, where the water is soon taken up.

ROCKET FOR FERNS.—*Rev. T. W.*—If you can get plenty of peat, loam, and silver-sand, you can do very well without leaf-mould. Give the preference to peat with plenty of fibre in it, and use about equal quantities of peat and loam, except for ferns which you know prefer all peat. No animal manure should be used in fern growing, and you need not seek any of the "artificial manures;" they would do more harm than good at the roots of ferns.

MUSGRAVE'S STOVE.—*Thorn.*—As now made for use in greenhouses, there need not be a particle of dust. The fire-box has a solid bottom, not a grating, and the ashes can be raked out without the least harm to neighbouring plants, as we found in our trials of it. The top plate never gets so hot as to burn the air, and it is covered with a second plate. The stove you had from Messrs. Musgrave, and which has answered so well for three winters in the dwelling-house, might be used in the greenhouse by reducing the draught, and by damping the ashes before removal. It has open fire-bars; those now made have a lump. Tom Thumb *tropaeolum* a foot apart.

HOTBED OF HOPS.—*S. W. S.*—You did not use hops at our advice; we never recommended them. A vast deal of rubbish called "bedding stuff" is sold about London from beds made of spent hops, and they make a remarkable mess of the gardens in which they are planted. Your plants, pots, and labels are covered with a fungus generated in the decaying hops. You must give them a good cleaning, then dust with sulphur, and transfer to a warm dung-bed, and give as much air as they can bear.

ASCLEPIAS TUBEROSA.—*G. B.*—This is a hardy species, flowering in August. It likes a mixture of peat and loam, and a warm, airy position. Propagate by division in May, or by cuttings of young shoots in heat, or by seeds sown in March in a gentle heat.

PLANTING POTATOES IN ASHES.—*W. B.*—Mr. C. L. Wilson, of Beekenhamp, communicated to the *Farmers' Journal* as follows:—"When planting potatoes in March last, I ordered my men to plant the four middle rows of a piece in finely-sifted ashes. We have yesterday and today (Sept. 14 and 15) dug up the whole piece of ground, and find the four rows planted in ashes free from disease, but all the other rows on both sides have about one quarter bad, and evidently on the increase. We ridged the ground, then placed a layer of ashes in the ridge, then the potatoes, next a layer of ashes, and, lastly, a little of the mould on the top."

ORCHARD HOUSE.—*J. A. P.*—If you putty the laps, the trees will not thrive. Your roof is too flat to carry the drip to the eaves. Ferns will do well in the borders when the vines cover the spaces assigned them, but we question if strawberries will have enough light and air there. To determine that point, notice if the weeds that come up in the border look drawn; if so, the place is too dark for strawberries, which require plenty of light and air. By standing the strawberry pots on large empty pots inverted, you would bring them nearer to the light. The back wall of the forcing-house would be better six inches higher; these flat roofs do not answer well for early work, as until the end of May they get a

minimum of sun, and much mischief arises through damp. If increasing the height of the wall is objectionable, take six inches off the front wall, and lower the path for head room. We should prefer a front wall only two feet high, to get the morning rays of the sun on the melon beds, instead of losing them by the intervention of brickwork. Houses are built with such flat roofs in nurseries, though rarely, and then it is for specific purposes that lie quite out of the range of your practice. Your measurements are good. You may follow Mr. Rivers' instructions with perfect safety, but we advise the adoption of the substantial rather than the make-shift method. Munro's cannon boiler will be the best for you, placed at the end of the house where the forcing-pit is to be. As you are an invalid, you had better employ an experienced person to fix the boiler and pipes.

VARIOUS.—*A. B. S.*—Your aquatic is *Menyanthes trifoliata*, the Water-bean, an early and handsome water plant.—*R. G., Gretton.*—1, *Cardamine pratensis*, abundant in meadows at this season; 2, *Corydalis bulbosa*, a British plant, very pretty at this season; we hear from a friend that he gathered it about the 20th of April, in a meadow in Hertfordshire; 3, *Saxifraga crassifolia*, a Siberian species, flowering unusually well this season; 4, a miserable specimen of *Aubrietia purpurea*, a charming plant for rockeries. Though this is sent to us in almost every parcel of plants to name, we wasted a good deal of time to make out the pinched-up bit with which you favoured us. We beg our correspondents to send fair specimens, not powdered leaves and the dust of smashed petals.—*Brentingly Cottage.*—*Saxifraga cordifolia.*—*S. S. S.*—The full-grown leaves of sea-kale make a most capital vegetable, not only equal, but better, because more fully-flavoured, than the same vegetable in a blanched state. The myrtle-leaved orange is a distinct species (and not the Seville orange), and can therefore be produced true from seed. It is a very desirable plant even for a small collection, because it flowers and fruits abundantly. It will, doubtless, be brought sooner into a bearing state, if a bud from a fruit-bearing plant be inserted into the seedling plants. August is the best month for budding oranges. Pans with holes will be most suitable for the ferns, because the drainage is thorough, if properly done. The arrangement may be such, in every particular, as recommended to "G. S." in a former number. Subjoined is a list of suitable kinds:—*Polypodium cambricum*, *Pteris serrulata*, *Adiantum cuneatum*, *A. hispidulum*, *A. capillus veneris*, *A. alpinus*, *A. reniforme*, *Polystichum lobatum*, *Doodia aspera*, *D. caudata*, *Asplenium adiantum nigrum*, *A. lanceolatum*, *A. alternifolium*, *A. ruta-muraria*, *Lomaria antarcticum*; and if the surface is much raised, two or three of the species of *Nipholobolus* will succeed perfectly. But the various species of *Lycopodium* are, after all, really the most satisfactory and pleasing things to grow under glasses of such description, and all of them enjoy such treatment.—*A. B.*—Cover the roof with sail-cloth or tarpaulin, and coat it with a hot mixture of tar two parts, pitch one part, and it will be water-tight for the remainder of your life-time. Your plant is *Cotoneaster microphylla*, a most beautiful berry-bearing shrub. The transplanting of quicks in nurseries is to promote the growth of fibrous roots. They are generally planted on the same ground again; the virtue of the act is in the lifting, not the change of soil, though there is sometimes a sprinkle of manure put along the trenches.

THE
FLORAL WORLD

AND
GARDEN GUIDE.

JUNE, 1861.



THE FESTIVAL of the "Gardeners' Royal Benevolent Institution," to take place at the London Tavern, on the 26th of June, demands attention, as of great importance to the interests of horticulture, independent altogether of the claims it has upon philanthropy, and the brotherly spirit by which the gardening craft is animated. We cannot but wish this society a most hearty success at the forthcoming anniversary, and we would hope to be useful to it by calling the attention of our readers to its high claims for support on all who are interested in horticulture. Its object is to assist in providing for the subsistence of head gardeners, foremen, market gardeners, nurserymen, and seedsmen, who have been engaged in either of their several occupations during twenty years, and who, through calamity, misfortune, or other causes, shall have become reduced in circumstances, and in need of pecuniary assistance. The widows of such persons are also eligible to election for relief. The society was instituted in 1838, and for some time after its first formation, it lacked the generous support which happily has been awarded it of late years. Its rules have been certified by Mr. Tidd Pratt, and its entire organization is such as to command the esteem of those who look on critically as well as those who liberally aid it with contributions from their purses. The rules require that recipients of the society's bounty shall be at least sixty years of age—cases of total incapacity alone excepted. The amount of relief given to males is sixteen pounds per annum, and to females twelve pounds per annum; and, in the event of a pensioner dying and leaving a widow, she is at once placed upon the list of pensioners, without the vexation and trouble of an election. The mode of election to the benefits of the society is by ballot, and every annual subscription of a guinea entitles the subscriber to one vote at elections, a privilege which may be compounded for by a life subscription of ten guineas. During the year 1860 the total income of the society was £1161 14s. 6d., not a great sum, considering how wide spread is the passion for horticultural pursuits, and how numerous

the personal interests bound up with it. This sum was made up of the following items:—Annual subscriptions, £616 7s.; donations received at annual dinner, £330 3s. 6d.; moiety of legacy from the late C. Palmer, Esq., £26 13s. 4d.; dividends on stock, £139 19s. 2d.; advertisements inserted in society's reports, £48 11s. 6d. The society paid in pensions £723. The sum of £187 2s. 6d. was invested in consols; the expenses of management were £133 17s. 11d.; that is about twelve per cent. on the income. The society's funded stock now amounts to £5100. There were on the society's books, as recipients of pensions, on the 1st of January last, fifty-one pensioners, of whom twenty were females, receiving a total of £240, and thirty-one males, receiving £496. In the list of pensioners there are five persons over eighty years of age, thirty-two over seventy years of age, and the rest are all over sixty, except one, who became eligible through total blindness.

There are reasons, over and above those which would attach to the case merely as a gardeners' benevolent society, why support should be liberally given by all classes of the community. To the working gardener the society may fairly appeal as a place of possible refuge, should calamity overtake him before he has been able to make a provision for his family; and it may appeal, too, as a source of help to his widow in the event of death seizing him in the midst of his active labours. It should be an encouragement to gardeners to set aside a portion of their earnings for so laudable a purpose, that those who have subscribed fifteen years consecutively, or their widows, have the preference, in the event of a competition for election where some of the candidates have not subscribed. And the man who considers himself so safe that he will never need the help of such an institution, or so independent that he would never resort to it, may well consider that among his brother gardeners there are many not so happily circumstanced, to whom, by the ordinary ties that unite men in kindred occupations, he owes it as a duty to assist in furnishing a relief fund for distress. There are many in the list of pensioners who, when hale and young, had similar thoughts; and in this day of improving thrift and active benevolence, gardeners must act on Nelson's motto, that "England expects every man to do his duty."

Of course such a society will largely depend on the patrons of gardening, who have more means and generally a better appreciation of the necessity of such institutions. It should be sufficient vindication of the case that those who come as candidates to this fund have done their share in life's battle to fulfil the demands of a life of industry, and have also helped in their several capacities to forward the interests of horticultural science, in the results of which we all partecipate. But there is another reason why the patrons of horticulture should come forward liberally, and increase the list of annual subscribers, and that is, that gardeners are not overpaid; too often underpaid, when it is considered that the occupation calls for a large amount of practical knowledge, incessant exercise of progressive skill, and entails anxieties such as only those who feel them can estimate adequately. If general reasons are needed, we may add that the society is admirably managed, and that a good working committee is ably seconded by the energetic secretary, Mr. E. R. Cutler. We trust the friends of the society will muster in good force at the forthcoming festival, that many new friends may appear with them, and that the subscriptions for so laudable a purpose may be equal to the demands made upon the society's

resources, through the misfortunes and calamities that befall gardeners in common with the rest of mankind.

TROPICAL GARDENS were the subject of numerous suggestions and remarks last spring, but in these pages not a word appeared in praise or condemnation of the idea, and some of our readers expressed surprise that what was agitating other minds was allowed by us to remain in abeyance. Perhaps those who complained will now admit that our silence had a meaning, for what sort of a season was 1850 for stove plants out of doors? Not that we had any prescience of the weather; no: we were putting out numerous subjects of a tropical character in the hope that summer would come at last; but we deemed it prudent to wait for a fair promise of sunshine before stirring up amongst our readers a desire after an object that possibly was not to be attained. It was well we did so: and those who dilated with so much warmth on the gorgeous effects of begonias, caladiums, and cannas in the open ground, would have done better by their readers to have said nothing at all, for people were thereby urged to expend money in the purchase of plants doomed to sadden in the wet, and pass away at last without giving their possessors any remunerative pleasure. But the season has opened so gloriously, that we are fain to believe that we shall have our averages of sunshine and ground-heat during the remainder of this year, and therefore we address ourselves to the subject of tropical gardens as seasonable and interesting.

The idea of planting out stove plants is based upon the very simple fact that many of the most effective of them grow with great vigour in the open ground from June to the end of September. In many places, begonias and caladiums accumulate and attain to such a size as to be regarded almost as rubbish; but instead of consigning them to the muck-heap, it is much better economy to plant them out in beds, let them grow in all their proper grandeur throughout the summer, and allow the winter to make an end of them, unless wanted for similar planting the next season. In 1859 there were several very successful examples of bedded begonias at the great nurseries and private gardens of note, but last year they were a downright failure through the frequent drizzle and the coldness of the ground. *Begonia Rex* must have the first place in the lists of kinds suitable to turn out, and there is nothing finer in the class when it grows with vigour. *Nebulosa*, *Grandis*, *Rollinsonii*, and *Griffithii* are also suitable, and their foliage effects distinct and beautiful. There is, perhaps, not a single caladium in the lists but would grow well and keep true to character in every moderately sheltered garden this side of the Tweed, from June to the end of the season, and we can imagine nothing finer than *Caladium Chantini*, and *metallica*, side by side, the one with its fiery ribs, and the other rich violet bronze; to these might be added *Belleymeii* for its snow-white leaf, ribbed with vivid green. From these two sources, then, we may draw materials for beds and masses of quite a tropical character to add to the interests of the summer garden. But we have at our command hundreds of such things. There are the cannas, unique and beautiful from the first day they emerge out of the seed-leaf; easily raised with a moderate bottom-heat, easily kept and truly superb in their tropical effect out of doors all the summer. There are at least a

dozen distinct kinds of *Ricinus* suitable to the same purpose, their stately growth and palmate leaves giving them a noble distinctness for the centres of large beds. For ordinary uses the best are—*Africanus*, *albidus*, with silvery stems; *obermanni*, red; *purpureus*, purple; or better still, *purpureus major*, and *sanguineus*, which produces large bunches of glowing crimson fruit. Then the bold peltate-leaved *Farfugium grande* comes into the same catalogue with only one objection, that snails and slugs will leave almost every plant in its vicinity to feast upon it, and utterly spoil its beauty. Among large-leaved plants, the *Farfugium* is without an equal when well grown, and offers a really tropical contrast to begonias and cannas by its unique style of colouring. Where subjects of this class are to be used on a systematic plan, there will be help needed from less tender classes, and we shall have no difficulty in supplying any desiderata among the colours required from the purple orach, *Perilla Nankinensis*, *Rumex sanguinea*, *Chenopodium atriplicis*, and *purpurea*, and the variegated reeds and grasses. It may be only right to remark that in the immediate vicinity of ordinary bedding plants, such as geraniums and verbenas, tropical-looking plants usually appear out of place and inconsistent, they require a compartment detached in some way from the high-coloured geometric patterns, where their peculiar beauties may be enjoyed without detriment through the proximity of effects more gaudy but perhaps not more refined.

NOTES OF THE MONTH.

ROYAL BOTANIC, April 24.—This was a good show of miscellaneous plants, Messrs. Cutbush and Mr. Young contributed hyacinths still in fine condition. Mr. James of Isleworth, and the Rev. G. Jeanes of Alford, sent well-bloomed collections of auriculas, cinerarias, pelargoniums, azaleas; and variegated plants were plentiful and generally good. Among the novelties, the following were plants of special merit—*Goniopteris reptans*, a West Indian fern; *Athyrium filix-fœmina* var. *Frizellii*, a charming variety of our English lady-fern; *Pteris rubro-nervia*, a free-growing fern, inferior, we think, to the species and varieties of *Pteris* of recent introduction; *Auricula Negress*, from Mr. Turner, a fine chocolate-coloured self.

ROYAL HORTICULTURAL SOCIETY, May 1.—The anniversary meeting was held in the Council Room, at the Garden in South Kensington. The Earl Ducie in the chair: and amongst those present were Lord Llanover, Earl Grey, the Bishop of Winchester, Sir J. Boileau, Bart., Right Hon. T. F. Kennedy, Colonel Higgins, Mr. W. Westmacott, Mr. H. M. Hope, Mr. Wentworth Dilke, etc. etc. Mr. Murray, the assistant secretary read the report which stated that—"Notwithstanding the imperfections caused by many unexpected obstacles, the council feel bound to open the gardens on the 5th of June. Some portions of them will not be in such a state of completeness as they could wish, and it may be matter for the grave consideration of the new council whether, after the formal and ceremonial opening and great show on the 5th and 6th of June, the gardens should not be again closed for a short period, for the finishing of the works. One of the works to which the council allude is the memorial of the Exhibition of 1851, now executing by Mr. Joseph Durham; which, as Fellows are already aware, has been placed at the disposal of the society by the committee entrusted with its supervision. Another feature which will not be ready by the 5th of June is the supply of water. After anxious consideration, the council decided on

providing the water required for the various basins, etc., as well as for the general use of the garden, by sinking an artesian well. There are other minor matters which, though it may be said that the works are incomplete without them, can hardly be ranked under the head of unexecuted works. These are statues, tazzas, vases, and other objects of ornament. If the progress of the works has been satisfactory, not less so has been the progress of the society itself. Since 1859 a greater number of new Fellows have joined the society than ever before did in any two years of its palmiest time. Such numbers sufficiently indicate the appreciation by the public of the efforts made to restore the society to its former eminence, their expectations of success, and confidence in the future attractions of the garden. The funds of the society have in this manner been largely recruited. Many of those who have joined during the last two years have become life members, their subscriptions representing a sum of about £13,300. The expenses, however, have been, and, to complete the works, must be, great, and the council (as the society is already aware) found it necessary to apply for authority to raise by debentures a sum of £10,000, in addition to that of £40,000 which was already sanctioned by the society. This authority was granted by the Fellows at a special meeting held on the 19th of April, and in less than a fortnight more than double the sum required was offered. The council, under the agreement with her Majesty's Commissioners for the Exhibition of 1851, and the other arrangements of the society, found it necessary to apply for a new charter. This has been for some time in preparation, and it is expected to pass the great seal within a few days. The ordinary working of the society has been going on satisfactorily during the last twelve months. By devoting the large conservatory at Chiswick to the cultivation of vines an admirable collection of the best kinds has been secured, from which the inferior sorts are being, by degrees, eliminated, and a very large number of cuttings of the now recognized best sorts, and of other fruit trees, have been distributed. The council have arranged to send a collector to an interesting district in South Brazil, and have also made arrangements with a collector who is already in South Africa, to collect and transmit seeds and plants to this country. The spacious council-room not only furnishes the Fellows with a suitable place of meeting, as well as accommodation for their minor shows and competitions, but removes any difficulty as to a hall for the delivery of lectures, and for the reading of papers on scientific subjects, should such be resolved on. The council feel it their duty to express their gratitude to her Majesty the Queen, and his Royal Highness the Prince Consort, president of the society. It is only those who, like the council, have had the privilege of seeing the time and thought bestowed by his Royal Highness upon the plans of the garden in all their details, who can appreciate the extent of that interest and the advantage the society has derived from it." The Duke of Rutland, Mr. John Fleming, and Mr. Robert Cooper were elected as members of the council in the place of three members recommended to be removed.

CRYSTAL PALACE, May 18.—Neither the sharp winter nor the cold spring seem to have much interfered with the labours of exhibitors, for there was never a better show than this at the Crystal Palace. To enumerate all that deserves mention would be to report beyond reasonable length; for the nave and transept were crowded with contributions as well as with visitors, and the spectacle was as grand as on any former occasion of the most brilliant floral displays. Mr. Lane, Mr. Turner, and Mr. Paul were each great in roses; Mr. Turner best in tulips, though there were many flowers in his lots wanting in quality. Azaleas were magnificent, pelargoniums not over abundant, but good, calceolarias in full beauty, and some of the specimens wonderfully well grown and bloomed. Fine-foliaged plants are even more in the ascendant than this time last year, and several of the newly-introduced caladiums and begonias were shown in the best exhibition style possible. Mr. Smith of

Dulwich had as usual a fine lot of seedling cinerarias, on which we shall have to report hereafter. Mr. James made a grand hit with common spring flowers. Mr. Shenton led the way in pansies. There were 9339 visitors during the day of the exhibition.

COLCHESTER HORTICULTURAL, May 15.—The first exhibition for the season took place on the grounds connected with the Royal Grammar School, placed at the disposal of the society by the Rev. Dr. Wright. There was a large collection of flowers of all kinds, and though the azaleas, which form one of the chief classes exhibited, were deficient both in the quantity and size of the blossoms, their deterioration was more than compensated by the magnificent show of general plants and pot roses. The president, G. H. Errington, Esq., offered a special prize for four stove and greenhouse plants, which was awarded to Mr. Hedge, of Ipswich, the varieties shown comprising *Dendrobium Nobile*, *Azalea Exquisite*, *Erica Syndriana*, and *Bossia Hendersonii*. The first prize for six miscellaneous plants was awarded to Mr. Hedge, of Colchester. In the class for four plants Mr. Catchpool was first with *Chorozema Lawrencea*, *Erica Cavendishii*, *Azalea Magnificent*, and *Aphelaxis Purpurea*. In Fuchsias, nothing could surpass the beauty of the four plants shown by Mr. Catchpool. They were *Rose of Castile*, *Crown Jewel*, *Guiding Star*, and *Wonderful*. Cinerarias, calceolarias, orchids, herbaceous plants, pansies, and verbenas, were numerous and good, but the roses were the subject of chief attraction. The pots shown by Mr. Catchpool included *General Jacqueminot*, *Glorie des Mousseuses*, *Jules Margottin*, and *Alphonso de Lamartine*; and of the cut blossoms those shown by Mr. Hedge, of Colchester, were perfect gems, particularly those of *Rubens*, a comparatively new variety, of most beautiful form and colour. The "lion of the show" was a plant shown by Mr. Hotson, and to which was awarded the first prize. This was a fine specimen of the *Gigantic Lily of India*, standing about seven feet in height from the top of the pot. Every effort to raise this plant in this country from seed failed, but a bulb was imported a few years since, and its blossoms at one of the great metropolitan shows created quite a sensation. The plant never blooms more than once from the same root-stock, and that not until its fourth or fifth year. The flower is of a soft creamy white, with purple stripes inside and about five inches in length by four inches in width across the opening. The leaf and flower-stem are in every respect dissimilar from the true lily. The stem is thicker than a man's wrist at the base near the bulb, and tapers to half an inch at the top where the flowers break forth. The plant in question had a dozen splendid blossoms upon it, which emitted a fragrance that quite perfumed that portion of the tent in which it stood. The show of fruit and vegetables was very good, considering the unpropitious state of the season. The pines, grapes, and strawberries, particularly the latter, were very superior—a dish of three varieties, shown by Mr. Green, gardener to Mrs. Honeywood, of Marks Hall, Coggeshall, attracting particular notice from their prodigious size and excellent colour. In the vegetable department, Mr. Stoddart, gardener to Mr. Rebow, was unapproached for potatoes, both of the round and kidney varieties. As might have been expected, the exhibition of cottagers' productions was very small indeed. The full prize list will be found in the *Essex Telegraph* of May 18.

DUBLIN ROYAL HORTICULTURAL, MAY 22.—This society's annual spring show of flowers was held in the Rotunda Gardens. Four marquees were erected, and the Round Room was set apart for the orchids and rare plants. The orchids belonging to Mr. Bewley, the Lord Chancellor, Mr. Joseph Hone, jun., and Mr. George Roe, were placed upon the stages in the centre of the room, and were regarded with great interest. The florists' flowers, and principally those from the gardens of the Messrs. Campbell, Glasnevin, were remarkably fine in bloom and size. A large tent contained the azaleas, which, as might be expected in this season of the year, formed the principal feature of the show. The silver cup for azaleas was won by Mr. Pim, for a

beautiful selection of six plants each. Mr. George Roe and Mr. Robert Gray obtained the second and third prizes respectively. The rhododendrons were very beautiful, especially those from Sir Roger Palmer's gardens, to whom the Lord Lieutenant's prize was awarded, and those sent in by Mr. Gray and Mr. Bewley possessed conspicuous merit. The stove and greenhouse plants exhibited by the Chief Secretary and his Excellency the Lord Lieutenant were greatly admired. The heaths, ferns, etc., were very fine, and the auriculas, for which Dr. Plant obtained the prize, were far beyond the average excellence generally attained in this class. But the most interesting fact of the show was the presence of forced peaches from the Viceregal Gardens. These peaches were large, mellow, and ripe, and their appearance in the show took most people by surprise. The cinerarias cannot be passed by without a word of praise, and the vegetables, of which almost every variety was displayed, showed how favourably the fine weather of the last few weeks has operated upon the kitchen garden.

BEDDERS AND TURFING PLANTS.

I HINTED last year at my intention to make a foliage ribbon, and as the thing is now accomplished, I may as well describe its characters. The border runs along in front of evergreens, symmetrically planted, and as rich in good species and varieties as perhaps any such border to be found on the north side of London. The rear line is common yew, American arbor-vitæ and holly alternating. The row next in front of that is *Ancuba* and *Thuia plicata*, with yellow iris and day lily to fill in between, at the foot of each shrub; these also alternate. Then there is a row of *Taxus adpressa*, with pairs of *Juniperus Virginicum erecta*, *Abies Khutrow*, *Berberis aquifolium* and *Fortuni*, *Quercus ilex*, *Ruscus racemosus*, pyramid box, both the common dark green and the silver-leaved varieties, *Minorca* box, and *Wellingtonia gigantea*. The plants are suited as to size, and as I make nothing of moving trees of any reasonable size all through the summer, these can be altered and rearranged at any time if they get out of order as to their respective heights, which some of them will do in time, and will then be provided with other places. In front of these is a strict line of dwarf green box, as round and compact as cricket balls, small arbor-vitas, from cuttings struck three years since, *Pinus cembra*, *Juniperus fragrans* and *chinensis*, *Abies Menziesii*, and tufts of *Festuca heterophylla*. The plants are of a size to range with moderate uniformity, many of the conifers are plunged in pots, being, in fact, those that did service in the *Jardiniere* last winter, and the arrangement is made symmetrical in this way:—if a box occurs at a certain spot, another box occurs also with a certain number of plants between, and after the same number again another

box, and so on with the rest. This gives variety with order, and agrees with the formal lines of colour in the border that forms the ribbon in front. As the effect of this planting is rich and interesting beyond any idea that can be gathered from this description of it, I will make it plainer by means of a simple scheme. Let each letter in the subjoined line represent one kind of shrub; then, as the letters are repeated, so are the shrubs that they represent; thus—

a b c d e f g a b c d e f g a b

It is but right to mention the background, because the simple ribbon in front of it derives much of its beauty from the support it has in the broad, rich, dense mass of various hues of green, from the very deep tone of *Taxus adpressa*, to the cheerful light green of *Abies Khutrow*, passing through all intermediate shades. The front line for bedders is four feet five inches wide, a very narrow space for a ribbon; but there are five rows to form, and those wider than the border itself. The planting is the simplest affair imaginable, and derives its effect wholly from foliage, and not from flowers. Let us begin at the back of the border, for a particular reason. I said the foliage lines were wider than the border itself, and the reason of this is, that the back row is planted into the line of the front low line of shrubs. It consists of the common ribbon grass, or gardener's garter (*Phalaris*). Between every two of the small shrubs is a tuft of this sparkling, white-leaved, graceful plant, and as they alternate all along with the richest imaginable greens, they look far more lively and effective than would a clear row, unbroken by any other colour. I know of nothing to beat that line in all the bedding effects

hitherto accomplished or described. Thus we gain a row without touching the breadth of the border, and we come to line the second, which is *Perilla Nankinensis*, planted thick, in four rows, the plants not more than five inches apart, and the line measuring eighteen inches wide. In front of these is another of the commonest of plants, *Antennaria margaritacea*, which, if left alone, grows two and a-half feet high, and produces dirty yellow blossoms, of the gnaphalium class. The beauty of this is its silvery foliage, and neat, upright, close habit, in which it far surpasses *Cineraria argentea*, and may be propagated a hundred times as fast; in fact, spreads naturally, and may be divided again and again. It is one of the hardest of herbaceous plants in our gardens, and will grow in the poorest soil, and never ask for a drop of water. This is in four close rows, fifteen inches wide in all, and will be kept topped to just the height required to make it range with the rest. Purposing last year to use this as a ribbon plant, I dibbled in odd pieces of it in various places along the mixed borders, having only one stool then to start with. As I wanted over two thousand distinct rooted pieces of it, I found myself close pinched when it was taken up and divided for planting. But I made the rows good right through, put the plants at double their proper distances, then chopped up the remaining fragments, topped a few of the strongest-rooted plants, dibbled all these scraps into five-inch pots, and, as fast as they made roots, removed them to thicken the rows with. Thus from the first, though with insufficient plants, this line was complete, though thin. It is now as thick as need be to allow for growth to the end of the season. In front of this silvery line is a close band of purple orchard, twelve inches wide. This is too tall a plant for a second row, but I could hit upon nothing else to give just the colour I wanted, and it will be kept to a low growth by constant topping, which will cause it to throw out side-shoots, and give its fullest possible amount of purple crimson, which it will not do if allowed to run up and form its chenopodium heads of seed. The front line of all, next the stone edging, is the variegated arabis, eight inches wide, the flowers of which are picked off as fast as they appear, as unnecessary, and interfering with the scheme.

It was expressly to afford a lesson on the uses of foliage, and the production of a good effect by the simplest and cheapest of materials, that I planned and planted that ribbon, else it might have been as gay with geraniums as any similar narrow

line could be; for I have all the best bedding kinds, and could take up the ribbon and plant for scarlet flowers at the mere cost of labour for the change. It is to be observed, that a mile or two of such ribbon might be planted almost for nothing. You need not even manure the ground, for if sweet, and sandy in texture, all these plants will grow with vigour. The purple orchard has been topped twice already, and the tops put in for a supply of plants in case a hot summer should make the second row too strong for the place, in which case they could be removed, and the line replanted with young plants, with short legs and less vigour than their predecessors, for my orchards were sown on the first of March, in pans, and the first of May is the best time for people who have but little time for pricking out and nursing, and then they may be sown in the open ground, where they are to remain. This arrangement, then, is all that could be desired of its kind. It is gay enough for me, and I quite enjoy its quiet, chaste contrasts, so different to the profusion of yellow and scarlet everywhere else to be seen. Only the gardeners guess of what it is made, and some of them are obliged to "pop the question;" people take it for a display of rare, curious, and novel tropical plants, though if the same things were sprinkled about in tufts along a mixed border they would not heed them. I said last year I hoped to use some of the dwarf high-coloured beets, for a back row to such a ribbon. I have sown a collection of beets in my kitchen garden, expressly to determine if any of them will suit the purpose; at present my mind runs on Myatt's crimson; but I will not now say if a beet of any kind is really good enough. As many of our readers have expressed a wish to know how to get up such a line, I will offer a few observations. Unless all the sorts are at hand in sufficient quantity, it had better be deferred till next year, because it must be densely planted to do justice to the idea. As mine is arranged, the border is nearly six feet wide, because the back row of *Phalaris* is planted into the row of shrubs; therefore we may consider six feet as the proper breadth for it. Get, then, a stock of three kinds this season, and carry the plan into effect next year. If you have the ribbon grass, divide it at once into as many fairly rooted clumps as it will make, and plant these on banks and rockeries. It does best lifted up high and dry, and will grow in any soil. Divide a row of *Antennaria margaritacea* if you have it, and plant the pieces in the borders wherever a tuft of silver will look well. If you do not possess it, beg, borrow, or buy a tuft at once, and

for a shilling you ought to make sure of it at any nursery in the three kingdoms. But do not limit your outlay to a shilling; get enough to propagate from fairly, that you may see the proper growth of the plant during the season, and thereby judge hereafter how to manage it for the best. It will grow in the dampest border as well as in a dry one, and next spring every stool will throw up a whole colony of white shoots in March, when it may be parted into pieces of one crown each, and committed to the line it is to occupy. A poor man in want of a fine contrast to geraniums and petunias should keep this in mind, as the best silvery-leaved plant we have. The same process must be followed with the variegated arabis. Suppose you get in a dozen potted plants that will bear dividing. Divide and plant out in sandy soil, though it scarcely matters what soil, so that it be not a wet clay. At the end of the season take them up, and pot them in very poor, gritty stuff, and just keep them alive, in a cool house or in your window, by moderate watering at long intervals. It is nearly hardy, but will not be safe out of doors if the winter is severe and wet. As soon as it starts well in spring, divide into as many crowns as it will make, and dibble them into five-inch pots, half filled with drainage, and the remainder quite to the rim with good compost, chiefly leaf-mould and silver-sand, and under bell-glasses or in a Waltonian case, and every one will root. If you are rich in it, as I was this spring, having got up my stock last year, simply tear the plants up and insert at regular distances, in April, about four inches apart, and they will meet by the time the rest of the ribbon is planted. As for the perilla and orach, they may be sown where they are to remain, during April or on the first of May; but it is better to sow in pans, and give the plants at least one shift into store pots, to get them well furnished with fibrous roots.

I am propagating now for next year the golden mint, a plant at present rather scarce, as I have never once met with it in all my travels. I picked it up at Messrs. Henderson's last spring, and propagated it rather too hard to see its full beauty in such a sunless season as the last. I potted all up for the winter, and then through carelessness lost the whole lot, and had to recover it again by striking a few sprouted tops on plants that were dead at the root. Those are now in a front line on another border, and are most beautiful. The hot sun of May brought them to their proper tint of bright gold, and I can see that this is a much more constant plant than

the variegated mint, which is apt to run back to its original green in rich soil. In other respects it is a companion plant to that mint, the same style of growth, the same form of leaf variegation, but instead of white this is a rich deep yellow over the greater part of the leaf surface. In seeking after this you may have thrust upon you the common orange mint of cottage gardens, with an averment that "it is all the same." Take my word that it is not all the same, the true golden mint is to the other common weedy thing as "Hyperion to a satyr."

Inquiries come in about *Spergulas* and *Saginas* and other probable and possible turfing plants. The inquiries are often accompanied with specimens, but the true *Spergula pilifera* has never once been so sent, nor has *Spergula saginoides* more than once. I have just been to the nursery of the Messrs. Carter—or at least one of their nurseries, for I know not how many they have to feed their order books, only that on visiting their place at Perry Hill, Sydenham, I was informed by Mr. Summers who has taken the management there, that only a portion of Messrs. Carter's bedding plants and *Spergula* turfs were grown there—and if you had any doubts as to whether *Spergula* will be generally grown or not, the reply will be found in the enormous breadth of ground devoted to it, and the business sagacity of Messrs. Carter in securing the services of Mr. Summers as *Spergula* nurse. I see plainly enough that *pilifera* will be superseded by *saginoides*. *Pilifera* is not only as good as I have described it but better. My own piece is now exquisite in its close felt of elastic verdure, dense as piled velvet. But *saginoides* grows twice as fast, and is not so particular about soil, though preferring it sandy; whereas *pilifera* does best on stiff loams and clays. There will be no need soon for seed, except where very large lawns are to be laid down with it, for turf may be had to cut up and plant on the old plan of making grass plots by inoculation, and there is enough turf at Perry Hill to sperrularize all the lawns in the county of Middlesex, and Messrs. Carter have for manager the man who has made it his hobby and knows more about it than anybody else. I can speak well now of *Sagina procumbens*, for I have lawn pieces of all the three. The *Sagina* held its green all the winter, and is now spreading laterally at a rapid rate.

All the bedding geraniums described last year as desirable for planting out this season are to be had in abundance from Perry Hill. Space is too precious this

month for descriptions, and reference to last year's volume will enable readers to judge which are the best to plant out or select for propagating. I strongly recommended Imperial Crimson, Diadematum, Carmine Nosegay, and Stella when they were first sent out by Messrs. Henderson. I saw these in great batches in one of the houses which Mr. Summers has made as gay as a Berlin wool mat, and amongst them some new ones about which it would not be fair to speak until they are to be let out. One I may name, because I fancy by the strain of it that it is from the same hands as the Imperial Crimson, Mr. Beaton being a persevering breeder of nosegays. It is a dwarf, neat habited nosegay, the colour is shaded carmine, and it is provisionally named Magenta, which name I imagine will have to be cancelled, for on comparing the blooms with true Magenta dye, there is as much difference as between a crimson and a scarlet. I shall try this geranium in half a dozen ways this season; in the hottest border, in the shadiest, in rich soil and in poor soil, and I quite expect by the look of it that a hot place and poor stuff will be necessary to make it flower freely and bring out the true colour. I recommended Purple Nosegay strongly last season, and our friends complained of a difficulty in getting it. That difficulty is at an end. There is an immense stock of it here, along with Crystal Palace Scarlet, Christina, Rubens, all Beaton's nosegays, and the best of the proved bedding gera-

niums of the last half dozen years. The demand for bedding plants is certainly increasing rapidly if such wholesale growth as is here to be seen is to be any criterion. But leaving the bedders for the present, I must record a fact of greater importance, and that is, that Mr. Summers showed me a stock of over fifteen hundred seedling pampas grasses, so all the losses of last winter can be made good without the risk of seed, nearly all of which now on sale is as dead as rappee. One more remark to balance against this praise of Messrs. Carter's bedding stock, and that is that their catalogue of bedding plants needs a careful revision, and amateurs may be led astray by its mistakes. Kingsbury Pet is entered as a scarlet geranium. It is not scarlet, but salmon flesh. Little David is described as superior to Tom Thumb, a statement in which Messrs. Henderson also indulge in their catalogue of soft wooded plants. It is not superior but different; it bites the ground more closely, has the same coloured leaf, as good a flower, but makes ten times as many seeds as Tom Thumb. It is dwarfer, and needs more watching to remove the trusses before they seed. Mr. Shirley Hibberd chrysanthemum is entered as a pompon, but it should be in the next section of pompon anemone flowered. There are other inaccuracies, the result, perhaps, of hurry, at a season when we should all like to have twenty-four hours daylight, and strength to go on without need of sleep.

SHIRLEY HIBBERD.

NOTES ON NEW PLANTS.

CONVOLVULUS MAURITANICUS.

A highly ornamental and drooping half-shrubby plant, of a neat well-branched and slender habit, with roundish oblong leaves, and a profusion of very elegant light blue blossoms, upwards of an inch in width, forming an admirable plant for suspended baskets or vases; also an unique and effective bedding plant, or carpet-like belt for surrounding flower-beds, and a charming object for rock-work and flower-garden baskets. Its gracefully procumbent growth is seen to great advantage when planted on the top of small mounds, by which its picturesque porcelain-blue blossoms are conspicuously beautiful. The plants require protection in a greenhouse or pit, and in the early spring season it should be cut back, and as its dense growth breaks at every joint, it blooms profusely from the

corresponding shoots at each axil and side branch; by thus obtaining a free and luxuriant growth, it will prove a charming plant for almost every desirable position in flower-gardens and conservatories where favourably exposed to light. Its free and long-continued bloom will prove its value in adding to the desirable variety of plants for the purposes above-named. [Messrs. E. G. Henderson and Sons. Price 2s. 6d. and 5s.]

DIANTHUS HYBRIDUS MULTIFLORUS.

This is a perpetual-flowering mule pink, it differs from other allied kinds in its more perennial and frutescent style of growth at the base, with the still more desirable feature of maturing a succession of flower-scapes up to the latest period of the year, and unfolding them in bloom during the

winter and spring months. It forms a free, vigorous, many crowned plant, and produces numerous flower-scapes. Twelve to sixteen inches in height from June until November, unfolding large corymbose heads | months, it is additionally valuable for potting in late autumn, for conservatory and greenhouse embellishments from December until March. [Messrs. E. G. Henderson and Sons. Price 3s. 6d. each.]



CONVOLVULUS MAURITANICUS.

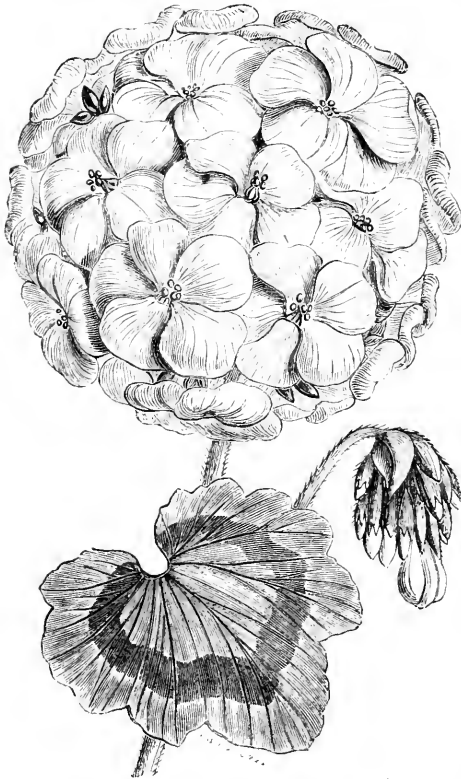
of semi-double fragrant flowers, opening a light rosy-carmine colour, and changing to a rosy-crimson tint. The blossoms are one inch and a-half in diameter. It forms a very beautiful object for large beds or groups throughout the summer and autumn

ALLAMANDA VIOLAGEA,

The violet-blue flowered Allamanda, was sent out by Messrs. Henderson last year, and is now an established favourite. It is a rare and beautiful hot-house shrub. It is

described by the late Dr. Gardner, director of the Royal Botanic Gardens, Ceylon, in his papers on the Vegetation of Brazil, contributed to the Quarterly Journal of the London Horticultural Society (vol. ii.), where he thus alludes to it:—"On my return to Crato, I again made a few excursions in that neighbourhood, and added considerably to my herbarium. One of the finest plants met with at this time was a beautiful new species of allamanda (*A. violacea*, Gardn.), a shrub from four to six feet high, bearing numerous large flowers

rough; the leaves are also more strictly oblong, and abruptly acuminate towards the apex or point; and still more strikingly distinct in the leaves being thinly and uniformly surfaced with close adpressed hairs, and minutely fringed with projecting ones, the under mid-rib being more prominently clothed with hispid hairs along its summit. As these features are entirely absent from the commoner yellow-flowered species, which have smooth acuminate-lanceolate leaves devoid of hairiness, each purchaser of the plants in question will be enabled to ascertain their correctness. [Messrs. E. G. Henderson and Sons. Price 10s. 6d. and 21s. each.]



GERANIUM PRINCESS OF PRUSSIA.

not unlike, in colour, those of *Gloxinia speciosa*. This is by far the most beautiful species belonging to the genus, all of which, with this exception, bear yellow flowers." Many spurious plants so named have got into cultivation through the raising of a quantity from seed by a continental grower. These are mostly *Allamanda cathartica*, from which *A. violacea* differs as follows:—The stems, when matured of a medium strength, are obscurely hispid, or

CALYSTEGIA OCLATA.

A new and interesting hardy perennial species from China, with neat acuminate ovate or heart-shaped leaves, and numerous axillary bluish-tinted funnel-shaped blossoms, picturesquely shaded with dark purplish-crimson in the centre, or throat. It is well adapted for wall or trellis culture, and by its continuous bloom from June until November, forms a pretty object for medium-sized flower-basket curves, or rural screens from three to five feet in height. [Price 2s. 6d.]

AGATHEA COELESTIS FOL. ARGENTEA VARIEGATA.

This charming little box-like suffruticose plant shows a neat dwarf and compact habit, from four to six inches high, with box-like silver-edged leaves, and is highly commended as one of the prettiest plants for marginal effect, or edging in the ribbon style of decoration yet known. Its flowers are sky-blue; but apart from these, it is the most unique object for its purpose known in plant collections. A First-class Certificate of merit was awarded to it by the Royal Horticultural Society's Floral Committee. We doubt if the variegation of this

plant will be constant, we therefore advise that it be grown in poor soil. [Generally in the trade. Price 2s. 6d. each.]

GERANIUM PRINCESS OF PRUSSIA.

This very beautiful variety is a fine example of the zonale-compactum section. It is well branched in habit, of medium yet free vigour, its leaf-surface being marked with the obscure brownish-purple zones which distinguish what are known as the horse-shoe or zonale varieties, which have sprung from *P. zonale*. The remarkably

compact and rounded trusses of flowers stand erect above the foliage, and the blossoms are of a bright orange-tinted scarlet on the upper surface, and rosy-scarlet beneath. Each truss contains from fifty to sixty blossoms, which are retained upon the flower-stem until the whole are expanded, a feature which is of great value in all flowers intended for groups or for vase culture. Its prolificacy of bloom, its brilliant colour, and the globular outline of its flower-heads, distinguish it from all existing varieties. These properties, and its adaptation to occupy a conspicuous position as a background bed or group in the flower-garden, give it a special value for decorative purposes, where grandeur of distant effect is sought. [Messrs. E. G. Henderson and Sons. Price 3s. 6d. each.]

SAURAMATUM GUTTATUM.

An ornamental greenhouse tuberous-

rooted herbaceous plant, with very richly spotted leaf-stalks, pitted or spotted with brown-red upon a green ground tint, the leaf-blades rising into large terminal spreading divisions with pedate lobes. The flower spathe generally appears before the leaves unfold, of an oblong-lanceolate strap-shaped outline from twelve to sixteen inches in length, elegantly spotted with orange at the base, and gradually merging into greenish yellow and opaque brown spots towards the extremity. Though said to be native of a warm climate, it is found to adapt itself to the open borders during the summer months, where its robust leaf-stalks form a very pretty object. The tubers require to be taken up in late autumn and preserved dry in pots or a greenhouse until spring, and after being well started in growth and gradually exposed, may be planted out in flower borders. [Price 2s. 6d. and 7s. 6d. each.]

THE NEW GARDENS OF THE ROYAL HORTICULTURAL SOCIETY.

THE immediate and unquestioning support afforded to the Council of the Horticultural Society, when it became known that it was their intention to construct a show garden at South Kensington, and devote henceforth the ground at Chiswick to purposes of experiment, has neither been betrayed nor trifled with. Fighting against a thousand adverse circumstances—a bad season in 1860 for preparing trees for removal, a dreadfully severe winter, the almost utter extinction of many species of evergreen shrubs, which would have been of immense value for immediate effect—the council has, nevertheless, kept close and faithful to its onerous duty, and the gardens already begin to assume an air of finish sufficient to enable any spectator, versed in horticultural practice, to form a decisive opinion as to their future permanent aspects. The society has acquired but a small plot of ground, and landscape effects are out of the question. Nor, indeed, would such be possible, even if twenty acres were laid out after the ideas of Price and others of the picturesque school, for there is no natural scenery with which to blend, and in which to lose a park-like disposition of irregular planting. We shall have at Kensington Gore an example of the application of high art principles, and a very complete amalgamation of the French, Italian, and English schools, Mr. Nesfield's object being the production of a finished picture replete with

elaborate details, highly coloured, symmetrical in geometric outlines, and inclosed in a framework of bold architectural design. That the gardens will be opened on the 5th of June there can be no doubt, but it is next to impossible that they will then be completed, even as to the necessary determination of the several features which constitute the whole. Entering from Exhibition Road, and passing the vestibule, we reach the garden by a flight of steps, and have before us the walk bounding the two large spaces marked off for floral exhibitions. This walk divides the ante-garden, and is intersected midway of its length by the main walk, a space being left at the point of intersection for a tank, in which hardy aquatic plants will be grown. From this intersecting point we obtain a fair view of the whole of the grounds, which lie before us northwards, and one effect of this disposition will be, that as the visitor proceeds step by step, the colouring of the flower-beds will be seen to perfection, without, at the same time, having to endure the full glare of the sun. To look south upon a flower garden is to see it under a disadvantage as regards light, and to lose altogether the full effect of flower masses and contrasts; in this respect the society has been favoured by the fall of the ground, as well as its position, and has judiciously made the best of favourable circumstances. Looking round from the green turf, now

acquiring its proper verdure, the eye rests agreeably on the arcades, which are in a different style on each level, but the styles harmonize with each other, and with the gardenesque of the other numerous accessories. The cross walk connects the entrance from Exhibition Road with the entrance from Albert Road, and divides into two equal portions the lower parallelogram or ante-garden. The exhibitions of the society will be held on the large plots on the left or south side of this walk; these plots are bounded by banks for ferns and alpine, and their front lines broken by clumps of evergreen shrubs. It is here that the architectural visitor will experience his first delight in the inspection of the south arcades. The round-headed arches, between piers set twenty feet apart, the spiral mouldings of the light shaftings, the floral capitals, and the diversity of design in the caps and belts, constitute a series of features unique in themselves, and their compound effect is as refreshing to the eye as the green turf on which we loiter to inspect them. Let imagination supply the roof and the glass front, and we believe that this is an example of garden architecture which has no match and no parallel for novelty and for unity of design. From the point where the main walk intersects this ante-garden, we can put Mr. Nesfield's plan upon trial, balance his geometric patterns and his colours, and conclude for a verdict that he has proved himself more than an artist. With the exception of the two oblong plots which form the northern half of the ante-garden, the rest of the plan is strictly symmetrical, every detail on one side having its counterpart on the other. These two plots are in harmony, nevertheless. That on the right hand is devoted to American plants, in circular groups, with grass alleys between, and large masses of shrubs and groups of tall trees, with a space of turf marked out for a pheasantry, fifty feet by thirty feet. On the left the shrubs and tall trees are matched, as is also the inclosed space of turf; but, instead of a pheasantry, there is to be an aviary for song-birds. The American garden has its match here in a maze of holly and hornbeam, of about a quarter of an acre in extent.

Proceeding northwards, we reach the first break in the level, formed by turf, and slopes, and shallow steps, and have before us the garden proper. The main walk is flanked by the two grand triangular panels, in which Mr. Nesfield intends to work out his idea of variously-coloured gravels, volutes in dwarf-box, and rich colouring in the inclosed spaces for flowers. The fine

deodars, which look but little the worse for the winter and their removal, will here tell with much finer effect than in any other of the public gardens about London, when they attain to sufficient size. The triangles are elaborate examples of scroll-work, in which may be traced out, without difficulty, even now, the outlines of the rose, shamrock, thistle, and leek, though the proper effect will, of course, not be visible till quite the end of June or the beginning of July, when the colouring will be at its highest. Beyond these panels are broad spaces of turf, groups of low trees and shrubs, and canals, fed by the larger waterworks above, and which run parallel with the main walk, and between it and the eastern and western boundaries. On the hither side of these canals are two other smaller examples of scroll-work, of no great consequence as items in the general design, but useful as affording diversity in the perambulation of the ground. As we quit the centre of the garden, still going northwards, we reach the second break in the level, ascending which we find the main walk diverge right and left, to form the centre-cross walk to east and west corridors. Before us we have the branch walk to the conservatory terraces, which is broken by a geometric arrangement of beds of different-coloured earths, in the rear of which is the great basin and cascade. On this level the decorations are of the most luxurious description: the grass ramps, the avenues of Portugal laurel, which match, as if all turned out of the same mould; the dead flat of the panels in grass, the beautifully-moulded verges, all attest that, in Mr. Eyles, Mr. Nesfield has found an able and willing coadjutor, and that his design will not fail for lack of directing skill in the carrying out of practical details. This part of the grounds will be the favourite promenade; it is sufficiently distant from the band-houses to allow of the mingling of the music with the splash of the cascades; and the high style of decoration will render it eminently attractive. East and west from this point, along the cross walks, we have a view of two small basins, with jets, backed by the steps leading to the corridors. Looking forward, right and left, two more canals, a match pair to those just described as flanking the centre level; on either hand, in front of the canals, on oblong grass-plots, geometric beds; before us the great central pattern in coloured earths, beyond that the large basin; then another ascent, and, as a centre-piece, the memorial sculpture of the Great Exhibition of 1851, to be placed above the cascade. The compartment of flowers and embroidery is 125 feet in diameter, and we

shall expect to see in it the best example of flower-colouring of which Mr. Eyles is capable; and we have no forebodings, remembering, as we do, the exquisite planting of the Crystal Palace gardens by him in 1859. The two great triangles, in coloured sand, and dwarf-box, comprise about a quarter of an acre each. There will be over ten acres of grass. The entire width of the garden is 700 feet in the portion comprised in the three terraces, and of the ante-garden, 800; the length from north to south about 1200 feet. It is here, on the upper level, where we can easily survey the whole, that the disposition of the levels is seen to the greatest advantage; and we can appreciate the skill which has made the most of the trifling fall of between thirty and forty feet. The third terrace overlooks the whole garden, and affords an agreeable promenade along the front of the grand conservatory, which is being pushed forward with haste by Messrs. Kelk, who undertook the contract for £15,470. On each side of the conservatory the great colonnade will extend in two great horns, inclosing the semi-circular head of the garden, and form an architectural sweep of 250 feet, and 700 feet span. In front of these the grass ramps define the boundaries and inclose the spaces on which visitors will assemble to hear the music, the band-houses being in the foci of the horns on either side. From the colonnades the view will be complete and grand, and the extent of the ground will be virtually enlarged by the regular descent of the levels from terrace to terrace, over rich breadths of turf, broken by a perfectly symmetrical arrangement of beds and clumps, parallel walks, the four canals, each 180 feet in length, the matched patterns in embroidery work, and the profusion of sculpture, dotted about in conspicuous positions; water-jets, specimen trees, avenues, bedding effects in geometric patterns, and grass ramps will fill in the scene with a multitude of harmonious details, and this will probably be the most finished garden on the mixed Italian model in the land.

But here we must remind the reader that for horticultural purposes one-half the outlay to be incurred would have sufficed to illustrate the modern style of display, and the suitability to our climate of the various trees and shrubs employed. We should entertain no doubt as to the permanent success and final triumph of the Horticultural Society, even with an expenditure of £70,000 (an excess of £20,000 on the original estimate), were not its antecedents such as to give rise to them of necessity. The history of the society is a series of mishaps, misunderstandings, and

misfortunes; and the scattering of the fine library and herbarium only just previous to the coalition with the commissioners of the Great Exhibition, gives the gray tone of warning where we are invited to behold only the rosy hue of a prospect, said to be full of great auguries for the future. The society emulated the phoenix, and in the moment of expiration was determined to soar once more into life and strength out of its own dust and ashes. Though we have some few misgivings as to its future, we cannot but express our hearty sympathy with it in its present great and meritorious work, and we have watched the progress of these gardens with more than ordinary interest, and have more than ordinary hope as to the result. It is no small task that Mr. Eyles has become responsible for, in carrying into effect the bold project of Mr. Nesfield. The trees removed from Chiswick had to be prepared for the process by tedious and careful operations. Now that they are in their places they testify that they were cared for in good time and judiciously handled from the outset. Deodars, of fifteen to twenty-five feet in height, are not exactly babies to deal with; but, like babies well cared for, they look plump and promising, they are shaking off the brown foliage that was killed back by the winter, and their new growth promises a wealth of dark verdure for relief to the flower-beds and lawns. Most of the large trees were lifted by screw-power, after having been tunnelled under, and the roots well matted, and were then transplanted in an upright position on machines, without injury to a branch or fibre. Now that earthworks are nearly completed and building operations in fair progress, we may ask, What is the prospect of the society? An outlay of £70,000, in great part on debentures, will place the society in no new position. It is used to debt. The enormous expense to be annually incurred in keeping up the place according to the grand scheme of the designer introduces no new element. The society is accustomed to great outlays, and, under heavy pressure, seems to be as expansive as a balloon. The hope for the future must be based on such a co-operation between the two gardens—that at Chiswick, where experiments are carried on, and that at Kensington, where the society will act as a preceptor in matters of taste—as shall insure a constant influx of new Fellows; not out of sympathy with novelty, but by the necessities of an advancing science. The floral and fruit committees have already shown how much may be done for the real advancement of horticulture by a combi-

nation of practical heads and hands ; henceforth to keep its place, the Horticultural Society *must lead the way*, must go in advance, must be the parent of ideas, the promoter of discovery and invention, and a bond of union between all classes interested in economic and ornamental gardening. We fully anticipate that in a few years the embroidery and carpet patterns will be pronounced a waste of money on a meretricious order of decoration, to be classed with the now obsolete plan of furnishing gardens with branches of shrubs ; for who will be bold enough to say that the formation of mosaics in coloured earths is a legitimate element of any department of horticulture ? But that will not crush the society ; it will only amount to a reform in accordance with change of fashion. But we shall not be surprised if the water-works next prove a heavier burden than the funds can bear, and that the next difficulty will be found in securing good exhibitions and paying attendances. We have not forgotten Chiswick and its mistakes and failures. We have before us the example of the Crystal Palace, where scenic elaborations were originally carried to an extent beyond all means of insuring remuneration for outlay. Put these probabilities together and add one more—namely, the decline of public interest when the novelty of the thing is over ; and it must be considered that the society has to walk up-hill in its monetary proceedings as well as in its new, and beautiful, and promising garden at Kensington. To strengthen itself for the toil it must boldly lead the way, and, as the door is opened for song-birds and pheasants, why are not bees to be admitted, so as to gather round the society the great Apian interest, which includes an immense number of persons possessed of taste, and leisure, and wealth ? If the society is to shed genial rays upon the cottager's hearth by encouraging the growth of improved varieties of the most useful esculents, and disseminating information on the best modes of cultivating the most valuable of garden produce, the bees, which pay the cottager's rent, should have shelter under the shadow of its wing, as recognized contributors to the national resources. But more important still is it for the society to take in hand the subject of garden implements,

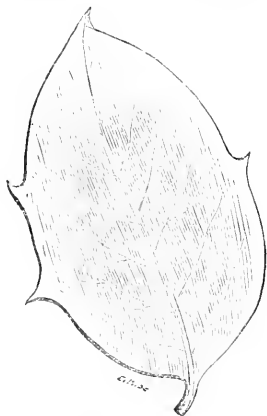
and, if possible, lay the foundation of an implement museum, so that when the Exhibition of 1862 is past, all that is notable in horticultural machinery may be gathered into one place for purposes of reference and comparison. What of the myriad lawn mowers, each better than all the rest ; are these to be tested, their peculiarities defined, and their relative values determined by uninterested umpires ? Protecting materials, tools in every-day use, barrows, tree-lifters, and a thousand other constructive appliances demand attention as much as the varieties of pears, and apples, grapes, strawberries, peas, and potatoes, and last, though not least, the new lawn plant, *Spergula pilifera*. It is odd that after all that the public has heard of this substitute for grass, and extinguisher of scythes and lawn mowers, the Horticultural Society has not yet uttered one word either to condemn or praise it. To improve the properties of South Kensington, to afford a new source of recreation to the people, to present the luxurious and tasteful with a noble example of high art in gardening, and so gather together the scattered interests of the floral world ; these are worthy objects of the society's new impulse : but the improvement of the science and the diffusion of information among all ranks of the community will give it still higher claims to support, and only by such will it attain permanent prosperity. Such prosperity we wish it, in making the world happier and wiser, and in fulfilling the smallest of its duties with as much zeal as the greatest.

The above is from the pen of a writer well known to our readers. It appeared in the *Mechanics' Magazine*, and its transference to our pages renders it unnecessary to offer any further remarks on the subject for the present. Since the paper was written, the works at Kensington have progressed most favourably, and by the 5th of June the gardens will be in a creditable condition. For the information of Fellows we should state that the new garden will remain partially closed after the 5th of June, until it is in a state of greater completion, and only Fellows and friends that accompany them, will be admitted. The public will be admitted only on Saturdays by the payment of 2s. 6d. each person.

VARIEGATED HOLLIES.

THERE is no variegated shrub or tree in existence capable of giving a more chaste and finished character to a plantation than the variegated holly ; and the silver varieties

are much more generally useful than the gold. Look about among the gardens for one of the best belts of evergreen shrubs in your district; glance along the belt, and you will find that however rich in various tints of green, russet, amber, and brown, which berberies, aucubas, Portugal laurel, Phillyrea, and such like substantial plants



FREE GROWING GOLD.

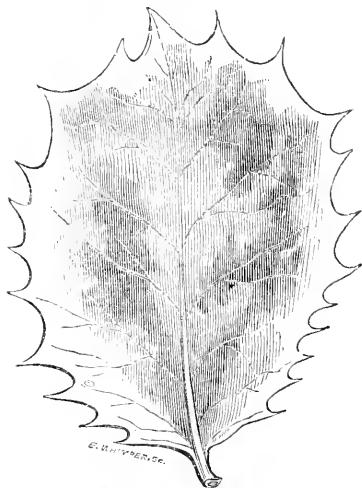
contribute to it, there would be a tameness and a sameness about the affair except for those well-disposed hollies which break in at regular intervals with broad masses of silvery gray, and give light to the whole picture. In formal planting, the ribbon method is certainly the most effective for exhibiting the characters of first-class



FEROX AUREA.

shrubs, and happily we have at command so large a variety, and so many distinct forms and colours, that as many varieties of taste may be satisfied as by the innum-

merable tints and tones of soft-wooded bedders. The botanical system, too, can be followed out very closely on this system; in a peat border the hardy ericas, gaultherias, Menziesias, and Pernettyas exactly suit for front lines, Kalmias of about five years old the second row, or according to what the front consists of, rhododendrons, andromedas, or ledums, after which taller rows are more easily determined on. So with a border of real good loam, what charming lines might be made with hollies only, or with a front line of skimmias to glow all along with myriads of scarlet berries. Pick over a lot of nursery hollies for the kinds and sizes, plants of two feet of some of the narrow-leaved silver for the front row next the skimmias, then



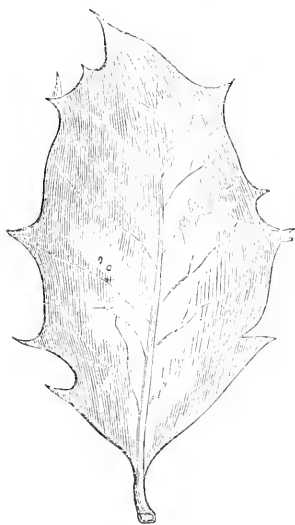
BROAD-LEAVED SILVER.

three feet plants of ovata; behind these four feet plants of Best Gold; next a five feet row of nobilis; followed by a six feet row of Painted Lady, a capital gold-striped leaf that shows well at a distance. For the back row tall plants of Balearica would be charming, as it is such a free berry bearer, and the entire leaves are always bright and glossy, but this holly is not good in small specimens, and to get large plants you must draw upon the cultural patience of somebody's ancestors, for it is terribly slow in its movements.

Here we have but one indication of the uses to which the holly may be put in ornamental planting; what would be the value of a hundred yards of such an arrangement as the one indicated above? I am afraid to make an estimate, but any nurseryman will do it for a probable cus-

toomer, and at good nurseries the stocks of hollies are generally large, and make an item in inventories when leases change hands. The wonder to me is how any dealer in plants can supply hollies of respectable size at from five shillings to half-a-guinea apiece, when it will take fifteen years at least to get a plantation up to a saleable size. Once get roots, however, and there is no fear of losses; they are sure stock both to grow and sell, but they must often prove a downright loss in rent of ground where a man must sell, and has large pieces.

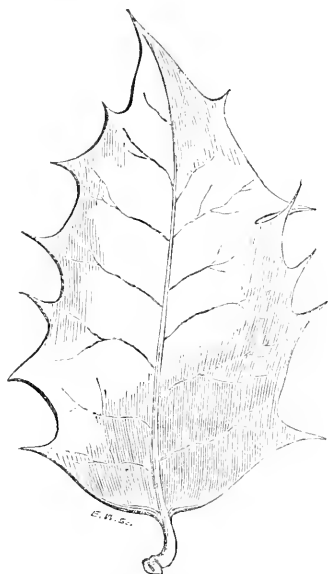
Take hollies again for single specimens, and among the variegates what a many beauties there are to dot about on lawns, break angles of walls, and form groups near



MILKMAID.

a seat or bower, and close under the drawing-room windows. It is to be noted also that small hollies lift well, and may be used to any extent for furnishing winter beds on the system of planting in October, and removing to the reserve ground in May. Use a mixture of very rotten dung and gritty leaf-mould to fill in with at each removal, syringe frequently after the May lifting, and you need never lose a leaf or a root-fibre, and as the balls get larger and larger, the trees will grow dense and compact, and if you live long enough to see them grow to a larger size than suits the system, give them their last move to final places, and in clear money value they will pay for all the trouble they have occasioned.

But there must be no trifling; the work must be well done, and by grouping with small plants of Portugal laurel, *Skimmia Japonica*, *Grieslinia littoralis*, *arbor vita*, *Phillyrea*, Chinese privet, *Berberis intermedia*, *Pyracantha*, *Euonymus*, sweet bay, and *Aucuba*; the beds now blank all the winter may be made as gay as in summer time, though different, because rich and massive, and the effect chiefly dependent on skilful assortment of distinct classes of



BRONZE OR ORANGE.

foliage. People often say, "We shouldn't mind the expense of such planting, for the beds *do* look wretched all the winter, but what are we to do with the plants when they get too large?" Now it happens that for the majority of such subjects, you must wait a good many years before the dilemma takes a definite shape, and *then* it will simply require to make the fact known that so many hundreds or dozens of hollies, *Phillyreas*, etc., are to be got rid of, and if a private purchaser or nurseryman does not come to the rescue with a good price for the lot, it will be the strangest event under the sun, for better plants than these will be after such a regular course of lifting, it is impossible to imagine. For years past I have been in the habit of potting up conifers and choice evergreen shrubs for winter decoration, and though a vast many long ago outgrew the possibility of using

them any longer in pots, there was never any difficulty as to what was next to be done with them. Places which they would just suit appeared as if by magic, and after such havoc as the last winter made with

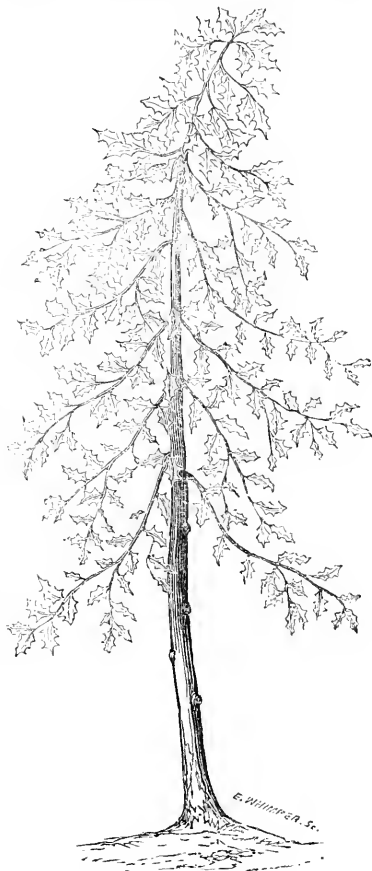


PAINTED LADY.

my Chinese and Japanese shrubs, I was glad enough to turn to account Junipers, Thuas, Abies, Pinuses, and other hardy trees that had attained to respectable dimensions in pots, to fill up blanks without making fresh nursery accounts. Go on with this system for ten years, and if such a winter does not happen, change the trees away for a lot of smaller ones, different altogether from the last lot, and with them whatever else you want to make up the difference in the value. To suggest these plans makes good for trade, and lifts ornamental gardening out of the dull groove in which it has been moving slowly for years past, as if it were an empiricism instead of an art.

There are several beautiful weeping hollies in the trade, the characters of which are good, and the uses of which are numerous. These are just the perfection of fancy trees for the summits of knolls, and for centre pieces to lawns of grass and spherula. There is one now getting into circulation, which surpasses all hitherto let out, and it is the one which Messrs. Perry, of Banbury, Oxfordshire, made public for the first time in 1859. We figured it at the time, but the cut was put aside because we were not quite sure that we could recommend it, but we now know all about

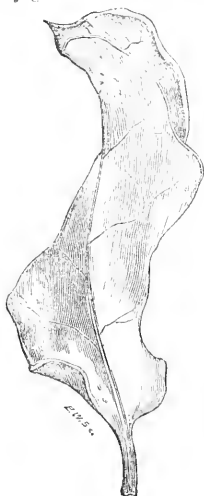
the stock and the habit of the variety, and can say without hesitation, that it is one of the most charming plants of the kind yet in cultivation. It is a decided weeper. The laterals converge at a uniform angle downwards, the leader turns over in a curve in the style of *Abies Deodara*, straightening by degrees as the wood hardens, while at the same time the new growth takes the same curve as that which preceded it. The foliage is most beautiful, of the form of aquifolium, of which it is a variety, and the markings of the same hue, but more de-



PENDULUM FOLIIS VARIEGATIS.

finite and broader on the margin than Free-Growing Gold. It is a bright cheerful holly, exquisitely graceful, and the plants worked with care on clean straight stocks, so as to give full effect to its pendulous character.

For the curious, *Tortuosa* must be considered quite unique. The leaf is blotched with gold yellow on the margin, and the midrib has an irregular streak of the same colour, the ground being a rich and lively green. Every leaf has a twist, so that but little more than half of the front surface is presented to the eye. It is one of the slowest growing of the tribe, and not at all suited for planting in masses. Another curiosity is the variegated hedgehog, the green hedgehog being a common holly in almost every garden. This is called *ferox*



• TORTUOSA.

aurea, as spiny as a caltrop, and the variegation running into a mass on each side of the leaf towards its termination, so as to form a letter V inverted. The common *ferox* is certainly not a handsome holly, though freely used in planting because of its curious porcupine armour; but this is showy and unique, and will suit well for conspicuous positions with those who like shrubs that interest and bear frequent inspection. Another very charming holly is *Milkmaid*, closely resembling *Painted Lady*, but less gaudy in variegation. The spines are quite irregular, and in some cases form distinct lobes in the convergence of the margin towards them. This is one of the free-growing kinds, and may go with *FREE-GROWING GOLD* and *BROAD-LEAVED SILVER*. Where it is desired to get up specimens as

quickly as possible, there is a still yet more striking variety called *Bronze*, the leaf of which is of the *aquilifolium* type, but instead of a marginal band or line along the midrib, the whole surface of the leaf shades from dull green into deep bronzy orange; the orange forming the chief colouring, and the green, which deepens towards the petiole being quite subsidiary to it. Where the least possible amount of green and the greatest possible breadth of orange foliage is required, this is the holly to make choice of.

My specimens are thirty-one in number, and I think I have now touched upon the distinctive characters of all that require remark. In describing the green kinds I should have advised the planting of *Latifolia*, which makes leaves of six to eight inches long in none but sheltered positions, for it often suffers from wind, and is not quite hardy, as the late winter proved to the dismay of Mr. Paul and others, who had good stocks of it. *Cheshuntensis*, figured last month, is a seedling of the Messrs. Paul's, and not to be had for love or money, for there is but the one original plant in existence, and the production of stock of it has not been attempted yet. It is altogether unique in its beauty, the green rich and dark, and in hue similar to *Portugal laurel* at its very best; the varnish on the surface as bright as the best French polish. If this were propagated as I believe it is to be at once, it would command a price per inch sufficient to repay Messrs. Paul for the value of the whole batch out of which it was selected, and something over for the dead weight of those pieces that have been on the ground fifteen or twenty years, and that are scarcely any bigger than when the present heads of the firm played at hide and seek among the oaks and hornbeams that screen the plantations.

Mr. Chitty spent four hours in getting the specimens together for me, and if he had spent four days the time would have been well bestowed in getting just so much intelligence of *Cheshuntensis*. There are many matters yet that demand attention ere we quit the subject of hollies, but as they will keep for a while, it is sufficient for the present that a few hints have been given at a season the best of all in the year for moving hollies to fill up the blanks of the last winter, and prove material for a higher order of decoration than usually prevails in private gardens.

SHIRLEY HIBBERD.

THE BEST ROSES OF 1861.

PLANTS of last year's roses are now being offered by the trade at the same low rate as those of 1860 were sent out last year. We have received the lists of Messrs. Paul and Son, Cheshunt, and Mr. Noble of Bagshot, and we are glad to find that all the good roses of recent introduction are offered at an average rate of 5s. each. The following are those we can recommend of our own knowledge:—

President, T.—A full-cupped flower, of a deep blush, with a buff tint; true tea scent. Certificate of merit by Royal Botanic Society, March 21, to Messrs. Paul.

Celine Forestier, N.—Lemon, gold-yellow centre. A very hardy and exquisitely beautiful rose. J. Standish, Crystal Palace, July 12, certificate.

Gloire de Santenay.—H. P. seedling of General Jacqueminot, and, like it, vividly coloured, but more double, most beautifully formed, large, vigorous habit. Will probably beat the General, and is certainly the best of the new high-coloured roses.

Duc de Magenta, T.—Exterior bright rose, changing to clear flesh, inside fawn, suffused with rose, sweet-scented, large and double. Very pretty and good habited.

Louis XIV., H. P.—Rich velvety crimson, good form, double, medium size and good habit, fragrant.

Madame Pauline Villot, H. P.—Vigorous habit, large flower, very double, brilliant red, first-rate rose.

Mulle, *Eugenie Verdier*, H. P.—White, slightly tinted with pink in the centre, vigorous habit, medium size, double, fine form.

Princesse Imperiale Clothilde, H. P.—Moderate-sized flower, double, good form,

white with yellowish centre, blooms in clusters.

Semateur Vaisse, H. P.—Brilliant red, large flower, vigorous habit, very attractive and desirable.

Souvenir de Monceux, H. P.—Vigorous habit, very large double flowers, colour a dazzling crimson, good, but not better than some older flowers of the same class.

Triomphe de Lym, H. P.—Superb velvety crimson, very large and double, vigorous habit, a splendid rose.

Vanquer de Solferino, H. P.—Brilliant, crimson, vigorous habit, flower even and full.

Victoire de Magenta, H. P.—Moderately vigorous habit, large double crimson, "*il lunné de feu et violet*," very pretty, but has its character yet to make.

Victor Verdier.—Habit vigorous, large double flowers, good form, pink centre, shaded carmine, continues blooming the whole season, and has much of the China strain in it; the best of the new roses after *Gloire de Santenay*. Shown by Messrs. Fraser, at Royal Botanic, April 25.

Madame Standish, H. P.—Deep rose pink. Shown at National Rose Show Crystal Palace, July 12.

Compte de Falloux, H. P.—Rose crimson National Rose Show, Crystal Palace, July 12.

Madame Boll.—Rosy pink, beautifully cupped. Shown by Messrs. Fraser, at Royal Botanic, April 25.

Reine de la Cité, H. P.—Pale pink, small.

Admiral Nelson.—Brilliant red, fine form, fragrant.

Belle de Bourg-la-Reine, H. P.—Satin pink, double large, vigorous habit.

YOU CANNOT GAIN UNLESS YOU GIVE.

THE ground of my small success lies clearly in the fact that the majority of farmers do not know the extent to which their own interests are concerned in this matter, and because the views and conceptions of most men in regard to the circuit of life and the laws which govern the preservation of the race do not generally rise above those of C. Fourier, the inventor of the phalanstery. He proposed, as you know, to supply the wants of the occupants of his phalanstery by means of eggs. He supposed it was only necessary to procure a couple of hundred thousand hens, each of which would lay 36 eggs a year, making as many million eggs, which, sold in England, would produce an immense income. Fourier knew

very well that hens lay eggs, but he seemed not to know that in order to lay an egg they must eat an amount of corn its equal in weight; and so most men do not know that the fields, in order to yield their harvests, must either contain or else receive from the hands of man certain conditions which stand in the same relation to the products of the field as the hen's food does to the eggs she lays. They think that diligent tillage and good weather are sufficient to produce a good harvest; they therefore regard this question as one in which they are wholly unconcerned, and look forward carelessly and with indifference to the future.—*Baron Liebig in a letter to Mr. Alderman Mechi.*

GARDEN AND GREENHOUSE WORK FOR JUNE.

APRICOTS to be thinned, young shoots nailed in, caterpillars destroyed, and water-engine used smartly if any sign of fly, which rarely troubles them.

AMERICANS newly planted must have abundance of water, overhead as well as at the root; this dry, hot weather will try them severely. Remove by carefully snapping out with finger and thumb the dead blooms of rhododendrons and azaleas, to prevent seeding.

ANNUALS of quick growth, sown now, will bloom late for succession. *Nemophilas* never make a better effect than from sowings in June, in moist, shady places. *Asters* and *balsams* to be planted out during moist, dull weather.

ASPARAGUS not to be cut after the 15th, then to be cleaned over and allowed to grow.

BEGONIAS planted out in open ground not to have a drop of water on their leaves, and to be handled with great care.

CELERY to be got into trenches as fast as the ground can be made ready, by the removal of other crops. Take up each with a ball, and do not injure a single leaf. Hoe over those that are established in trenches, to break the surface that has been hardened by watering.

CINERARIAS may now be earthed up, to promote the rooting of the suckers. Throw away all seedlings of inferior quality, and propagate only the best. They require a cool, shady place while making suckers, which are to be removed as soon as rooted.

CAMELLIAS may be got out in a shady place, on a bed of tiles or coal-ashes, and kept frequently watered. If kept in the house, there must be air on night and day. This hot weather will ripen the wood to perfection for next year.

DAHLIAS planted out, to be staked before the roots extend. Plant out all that are in pots at once; they will do better in the ground now than with any more nursing.

FUCSIAS keep well shaded, well watered, well ventilated, and with a cool, moist bottom. Plants from spring cuttings will be useful in five and six-inch pots, to keep the houses gay with balsams and other summer flowers.

GERANIUMS propagated now will flower in the autumn; sorts of which a large stock is required for next year, should be cut at as soon as established in the reserve ground. In bedding out use a trowel, and close in neatly, as the plants will not thrive with hard cakes of soil about them. Where the soil is very rich, and geraniums are found to grow too rank for flowering freely, merely raising the beds to render them dry will do much to insure a gay bloom. Road sand from gravel roads is the best of all soil for *Tom Thumbs* and other ordinary scarlets.

HELIOTROPES make rapid growth on hot walls, and are very useful to fill up blanks. *Petunias* may be used the same way, to run up to five or six feet. Rich soil and plenty of water are requisite if such a free growth is required.

HERBACEOUS PLANTS may now be propagated from cuttings as they go out of bloom. *Alyssums*, wallflowers, perennial *Iberis*, etc., are easily propagated, and the borders may be richly furnished with them by a little timely trouble.

VINES to be frequently syringed, and every appearance of vermin to be dealt with promptly. Train in as soon as the shoots can be handled, that there may be no after-twisting and injuring.

TO CORRESPONDENTS.

CATALOGUES RECEIVED.—"Spring List of Soft-wooded, Bedding, and other plants, sold by E. G. Henderson and Son, St. John's Wood, N.W." A very interesting and copious list, rich in new verbenas, geraniums, begonias, dahlias, roses, etc., etc., with all the best old-established decorative plants.—"Spring Supplement to Carter and Co.'s Gardeners' and Farmers' Vade-Mecum, comprising Bedding Plants, Greenhouse and Stove Plants, etc., 237, High Holborn, W.C." Copious and intelligible, contains a few inaccuracies. Among the novelties announced are many of very high merit, on which we shall have to remark hereafter.—"Spring Catalogue of Roses, Hollyhocks, Pelargoniums, Dahls, etc., grown by William Paul, Waltham Cross, N." A short, but good list of things in general demand, but of special interest for the list of new roses.

MANDEVILLEAS AND GLYCINE.—A. B. S.—We

have very frequently had to advise on stubborn *Mandevilleas*, and by referring back, you will obtain, perhaps, all the information you require. Your plant appears to languish simply for want of heat to make a smart growth in the spring. A great many people attempt to grow it without having command of sufficient heat, and hence the oft-repeated inquiry as to the reason of the failure. The *Wistaria* is evidently in a soil that does not suit it. It requires a deep sound loam on a dry hotton. The season is too far advanced for much to be done. Give it frequent waterings, and ply the syringe frequently of an evening till the middle of August, and not beyond that time, and you will perhaps get a little growth. In February next take it up and replant, using two good barrow-loads of turfy peat, two of yellow loam, and one of old cow-manure. As soon as it begins to break, cut it back to a low plump

bud, and it will start away and make a plant the first season; which, if not cut back, it will probably never do, having been stunted so long. In a lawn of spergula, weeds will certainly make their appearance, and their removal is the only trouble occasioned by the use of spergula, beyond rolling, which is requisite also with grass. The weeds must be removed by hand. We use a large old pruning knife to lift the weeds out, and if the spergula is disturbed by the process, it only needs to be pressed down again into its place and be well rolled after weeding. To gather the blooms of Lily of the Valley, makes no difference at all in their future blooming.

FLOOR OF GREENHOUSE.—*Thorn.*—There is nothing better than foot tiles, laid on sand and without cement, and sand grouted in between them; these cost in London 3*d.* per square foot. Coal tar and ashes would emit an odour for a long time, but as the house can be cleaned out now, the smell would be gone, or so much reduced before stocking it again, that we think you may safely use it, but it should be done at once. Or a concrete walk may be made with chalk and stones one foot deep, with a sprinkle of gravel on the top, to be watered and rolled, or beaten firm. But there is nothing to equal red tiles; they can be kept so clean with water and broom.

ROSES IN POTS.—*G. W. F. H.*—Your frame, ten feet by six feet, with three lights, is just the place in which to get up and keep a nice stock of pot roses, including teas, because you can give them as much air, sun, shower, shade, and shelter as you like, by means of mats, removal of lights, etc., etc. They must be plunged, and you will find coal-ashes, or sand, or sifted gravel the best. Your friend, whose roses suffer from mildew through being plunged in spent hops, is a victim of a new-fangled notion that is doing a deal of harm. Tell him to consign the hops to the muck-pit, where they will rot away and do no more harm. Sulphur is no use in such cases, because the hops are a seed-bed for the most destructive of fungi. Make your roses from eyes, as described by us last year, and you will have better stock than you can buy; the trade are obliged to work them to sell them at a price the public is not alarmed at; people will not pay enough for roses on their own roots.

TORQUAY CLIMATE.—In your July number, 1860, p. 160, you inserted my statement of the effect of the *then* previous winter on the shrubs and plants at Torquay. I now report the result of last winter's hard frost. The bottle-brush (*Beaufortia splendens*), that has been out unsheltered for six years, was cut to within an inch of the ground, but my two plants are now sprouting out again from the stump. The *Begonia* discolor close to the above is throwing up its beautiful leaves uninjured by the frost; both usually sold as stove-plants. The *Passiflora cerulea*, four plants of ten years' standing, all round the verandah, are killed to within a few inches of the ground, where it is again throwing out shoots, while two or three small plants (last year's suckers) have stood the winter close by uninjured. All the veronias, except the very narrow-leaved one, are killed, the bark having split to the roots, like a water-pipe, by the frost. The eunymus were in some places killed in the same way, in other situations much cut up. The coronillas were all killed to the ground, except two weakly-looking plants that were moved on to a dry bank last autumn, and exposed to the east winds, so that I doubted if they would grow at all, and they are the only ones doing anything; seedlings are springing up by hundreds under the old plants. The

magnolias were much injured. Our laurestinas, laurels, etc., were mostly uninjured. There is very little blossom on the white thorn in the hedges this year, and very few bees visit their favourite plants in the garden, so many swarms being killed this winter.—Yours truly, A. B. S., Torquay.

SOILS FOR FLOWERS.—*R. H. H.*—No doubt the proposed list would be useful, but it would occupy a great deal of space, and would look more useful than it would be, in fact. We must always bear in mind the difference between a journal and a book. As to soils, you have but to hit upon the way your friends make up what you describe as geranium soil, to be able to do as they say, that is, grow almost anything in it. With us, the incorporation of soils is a very simple affair; we keep bins filled with sand, leaf-mould, rotten dung, peat, and loam, all separate, and another for the sweepings of each, and the waste out of pots, and for every batch of plants potted, a mixture is made at the time, and in ninety-nine cases out of a hundred, the mixture consists of about equal parts of loam, leaf, dung, and sand, the coarser parts at the bottom of the pot, and the finer at the top. But the question arises, what is loam, and what is peat? Instead of attempting now to define and describe, let it suffice that, where buttercups grow luxuriantly, you may call the soil loam, and good loam; and where heaths grow luxuriantly, with fine grasses and wild thyme, you may call it peat, and use it as such, and the more fibrous its texture the better; it ought to be tough, like a felt, and the loam ought to be pulverable in the hand, and rather retentive of moisture.

PIE JUICE.—The time is now fast coming on for fruit pies, and, therefore, for pie-juice; and as our readers strive all points for the practical and useful combined, we intend to offer a suggestion for "the better arrangement" of pie-juice. Some people place an inverted cup in the pie, thinking this catches juice that would otherwise boil over, but that is a mistake, for though juice is found under the cup when the pie has cooled, yet it never entered the cup whilst the pie was in the oven; for this simple reason, the inside of the cup was as hot as the inside of the pie. The case of inverting a cup in the pie does more harm than good, for, as the heat cooks the fruit, it also expands the air in the cup, which air tends to blow out the juice from the dish: but if a small hole, say a quarter of an inch, be made in the bottom of the cup, which, of course, comes to the top of the pie when inverted in the dish, the hot air will escape into the oven, and leave room for the juice to run into the cup, which again will descend amongst the fruit on the pie cooling. "Now how are we to make this small hole in the bottom of the cup?" says the reader. "Listen, and you shall hear," says the writer. "Take a six-inch flower-pot, fill it with dry sand, or mould, then take your cup, invert it, and push it down into the mould or sand till only the top is just seen, by which means the inside of the cup is as full of sand or mould as it will be of juice when in the pie; then take a sharp pointed instrument, like an old pair of scissors or a one-pronged fork, and begin to peck away little by little, and you will soon have a small hole, which can easily then be made bigger before taking the cup from the flower-pot. The sand or mould prevents the cup from cracking or breaking during the chipping process. When the cup is used invert it in the pie, but take care that the *small hole* is free from the crust." Here is a very simple contrivance that will soon prove itself. A grand plan is to make three pies, one without any cup, one with a cup, and

one with the cup with the hole in, then you will see the difference.—**OLD FRIEND.**

LONDON ROSES.—Perhaps a few words from a town gardener in a small way, may amuse or instruct others in a like situation. I have about forty kinds of roses, several plants of some. First, as to General Jacqueminot. This rose has not done well with me, and I fear is not quite hardy. I have lost three plants (worked dwarf) out of six. Gloire de Dijon is excellent; five awnts stood the winter out of doors, in the ground, merely covered with a little hay. S. de Leveson Gower, M. Vidot, J. Margottin, C. Patrizzi, dwarf standards, moved in the autumn, remained green in the shoots through all the frost, as also did Wm. Griffiths, J. La-fitte, Alex. Bachm-teff, and M. Domaze. My —* reckon as follows. All were worked plants, and the stocks, Manetti, were not killed, but only the bud. Hybrid perpetuals: E. Bergmann, Mad. Campbell, Reine de Guisotiere, Auguste Mie, some are still living of this sort, the same Baronne Prevost, D. P. Blanche Vibert, B. Dupetit Thouars; this does not do well, the buds crack. Justine also is not of much account. If you think proper, I will give you a list of sorts, and my experience with them, in a future number. Let me suggest you would be conferring a great pleasure and profit upon amateurs, now the rose season is coming on, by a paper upon the newer sorts, and, indeed, a few notes on some of the old ones, which are not yet surpassed, if equalled. It would enable us to look out for, and note down, those varieties worthy our future acquisition.—**H. D. P.** [All you have to do is to get the roses that suit you on their own roots; then you will find the General the best you have. If among our readers there are any who still question, as they did, the policy of growing roses on their own bottoms only, we suggest to them a revision of the winter's work among the roses. Where are the worked plants now? * Illegible.

BIRDS IN GARDENS.—*Pensioner.*—We cannot advise any meddling with birds or nests. We believe there are not enough birds in our gardens, else we should have less insects. The passion of destruction entails large penalties on horticulture when it finds gratification in shooting and trapping birds. We sat with Mr. Holland one day last summer close beside a batch of roses smothered with green-fly, and we saw the sparrows stripping them off the shoots by wholesale. We concluded therefore that given more sparrows, the fly would not have acquired such a mastery as almost to kill the roses as they were doing. We have carefully taken note of the visits of bullfinches to fruit-trees, and observed as good or better crops in seasons when the bullfinches most abounded. Depend upon it the Almighty has established a fair balance amongst all his creations, and if a bird takes a grain of corn or a ripe berry, it has long ago paid for it in the destruction of a million vermin. Do away with your scarecrows and bird-clappers, and attend to cultivation, and you will have better crops than people who waste their time in tying bits of tin to horizontal threads to frighten birds away. Read this from the papers:—"The authorities of Lyons have issued a decree against boys being permitted to meddle with birds' nests in that department, and parents, as well as schoolmasters, are rendered responsible for any such delinquency of these juveniles. The document asserts that the destruction of birds is the ruin of fruit-trees, inasmuch as their proper prey, caterpillars, *chenilles*, etc., etc., are infinitely more noxious at this period of the year than the feathered tribe in summer or autumn."

INSECTS AND ROSE LEAVES.—**H. D. P.**—The insect is *Julus terrestris*, or many many-feet, a feeder on roots, and to be eradicated only by perseverance in detail, there is no specific against it. Try pieces of carrot or potato buried in the soil, with a stick to mark where each traps. The leaves are mildewed and burnt. We suspect you have been drenching them with water unseasonably; while wet, the sun has caught them and caused scorching, and being unable, through feeble root-action, to appropriate the water, they have acquired mildew. Both affections will pass away with this splendid weather; you have simply to leave them alone. The roses you name are perhaps good in London, but we cannot speak positively; it is not such easy and quick work to prove roses in a way to determine their suitability to be generally recommended in such a work as this. **H. P.** De la Reine d'Angleterre is first-rate in town, and so is Ravel; we seem to recollect recommending them both. The list in Mr. Cranston's book is the record of a conscientious man's experience, but it does not agree with our own observations in the suburbs of London. It is, in fact, a list for the Midland counties. Many of the roses he recommends for towns, are of no use near London, but are good in Mr. Cranston's district.

WALTONIAN CASE.—**M. A. H. T.**—A temperature of 60° is quite enough for half-hardy annua's, and you will now get heat enough in the case without burning the lamp if the case is in a greenhouse. It will be useful now without artificial heat for striking cuttings and starting seeds all the summer. If your seedlings are drawn, it is because they are too dark and close; if they come up unevenly it is because they are covered too deep. In former volumes the fullest particulars have been given of the management of the case, and of propagating plants by it. Subscribers who have recently commenced, would do well to order the former volumes, as they are full of valuable articles on elementary gardening, and their cost is but a trifle.

BEER FROM PEASHELLS.—*Romeo.*—Beer can be manufactured from mangold wurtzel. Gibbou Merle says it is made by fermenting the liquor obtained by boiling mangold wurtzel in the same way as for malt and hops. There is no doubt that the quantity of saccharine matter is nearly the same in the beet and the mangold wurtzel. But the nearest approach to genuine beer is obtained from peashells. This is made by putting the green shells in a boiler, and pouring on water till it reaches half an inch above the shells. Let them simmer three hours and add a decoction of sage leaves as a substitute for hops. Ferment it with yeast in the usual way.

CARRION MANURES.—**B. S.**—Wherever you apply bullock's blood, the soil will become a sour, soddened, filthy paste, in which no tree will make a healthy root, and, therefore, you must not expect fruit from the pear-trees and vines you have drenched so liberally with the sanguinary garbage. You may have subscribed to the *FLORAL WORLD*, but it is certain you have not read it, or you would have paused before poisoning your trees in the vain hope of getting more fruit.

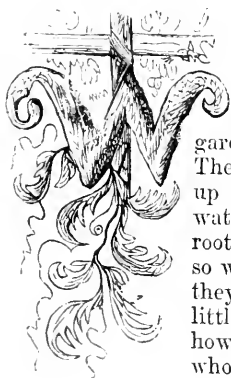
WATER.—**E. F.**—Hard well-water is not good for plants. Why not pump it up, and expose it to the sun one day at least before using.

VARIOUS.—**F. D. I.**—There is no one living who can tell double from single stocks, either in the seed-leaf or afterwards, till they show for bloom, else you would never see at the nurseries whole batches of single stocks put as de out of sowings made for the choice stock. Thanks for the enclosure.

THE
FLORAL WORLD

AND
GARDEN GUIDE.

JULY, 1861.



WATER has been described as an excellent thing for—navigation; it is also an excellent thing for gardening, as most of our readers know by this time. The deficiency of sun last season has been almost made up to us already. It is hard work to shade, and water, and mulch, and by other means keep the roots of plants cool and moist; but the sunshine is so welcome, that few gardeners grudge the labour if they can but get water. Too much last year, too little this. What a capital excuse for grumbling; but how should we estimate that man's faith in providence who would grumble when, to insure all the results desired in gardening, water is now almost the only

thing we require. Now, we cannot tell our readers who are short of water how to increase their supplies, for wells cannot be sunk at an hour's notice, and many old and deep wells are getting so low that the pump threatens to strike work unless favoured with more liberal wages; but we can tell them how to use water to the best advantage, and how to do without it in some measure if it cannot be got, and so we may devote a short space to a few practical remarks, for the cry is water, water, water, and the barometer stands still, and the glorious sunshine makes the earth like a hotbed and plant-houses like ovens. Look at a piece of loam, baked hard with heat, planted with dahlias, cabbages, or what not; not a drop of water, or, if plenty, the labour of carrying and delivering would be too much to think of. Use the hoe over that piece of ground, as if you would let out the last drop of moisture from the soil by evaporation. But, presto! you have conquered the enemy. Next morning the plants look fresher, they grow above ground and below ground, and get substance, when it appears as if the heat ought to kill them. How *do* they get moisture when the surface is thus broken? What a chance for a little theorizing in reply to such a question, but let us dismiss the question by simply stating that after hot days there are heavy dews, and

that ground broken on the surface absorbs an immense quantity, and, *perhaps*, that is all that need be said about it. Suffice it that in practice the use of the hoe or small fork to break the surface is as good and better than a heavy watering, independent of the killing of weeds and the promotion of cleanliness. Now, to use water, the plan that makes the most of it is the one to be preferred. If you cannot soak out-door plants to the root, do not water them at the root at all. A mere moistening of the ground is more harm than good, for it brings the roots to the surface, and the next blaze of sunshine will burn them; but you may keep them moist, nevertheless, by means of the syringe. Suppose a row, or bed, or large mass of any kind of plants established in the ground, and watering to be impossible; after sunset ply the syringe or garden-engine, so as to thoroughly wet the foliage; or, if it cannot be done at night, do it early in the morning, while the leaves are yet wet with dew; but the night is preferable, as during the cool hours the plants will absorb the whole of it, and the coolness of the leaves will induce upon them a heavier deposit of dew. On light soils wonders may be done by mulching, not only in such a hot, dry season as this, but in all seasons and all weathers, while plants are in growth. We can hit upon nothing better for mulching than stable-dung, the old-fashioned friend, and the fresher the better, even if but just removed from the stable-floor. But littery dung is very unsightly, and all mulchings attract vermin. These are the objections that force themselves most prominently upon our attention whenever mulching is proposed in summer time. A heavy mulch now of fresh short dung would do wonders for the second bloom of roses, and render watering the ground quite unnecessary. Of course no amount of mulching will do away with the necessity or advisability of drenching overhead, and to wet the foliage of roses regularly after sundown is to increase their beauty tenfold.

Now, here is another use of water of which the roses remind us, namely, that it is an inveterate vermin killer. We have scarcely seen a green-fly yet this season; our roses are as clean as if just modelled in wax or paper. But we were troubled with fly on some potted peaches wholly through cutting off their supplies of drink. Those peaches, when almost leafless, were set together in a batch, and the syringe used with a one-hole hose with all the force possible. The flies were drifted we know not where, and in three weeks those trees were breaking beautifully, and in good time to make their wood and ripen it. There are no flies that can endure water, especially if used with force and repeated frequently. Brown scale will not appear on plants that are kept familiar with the syringe, and grubs of all kinds, like dirty people that they are, hate water, and pronounce it objectionably wet.

There are hundreds of other ways of turning water to account, apart altogether from the regular routine of what is called "watering." In plain truth, it is well to know when not to give it, and the truth must be told that indiscriminate watering is mischievous, and should not be tolerated in any garden pretending to be well kept. All plants not of a decidedly marsh or aquatic habitat will do better if left to themselves—that is to say, when once they get hold of the ground—than by fortuitous sprinklings. A moistening of the surface will cause them to send fibres upward where the sun will burn them, but an absence of surface water will cause them to send their roots down where there is moisture enough to sustain them till the next rain comes. But marshy plants, such as

mimulus, lobelias, herbaceous spireas, and others that the reader will think of without our needing to name them, should be thoroughly soaked at regular intervals while dry weather lasts; and in a large collection of plants it will be better to give all that can be spared to certain selected subjects, and none at all to the general out-door stock, than to waste the supply by any attempts at general watering. Plants under glass have suffered considerably where gardeners have been careless or too busy in planting and other work to put up shading, and make such arrangements as the fierce summer-heat required. We had a mishap ourselves through sheer negligence. A fine lot of potted strawberries, loaded with fruit and with leaves like cabbages, were doing wonders in an airy lean-to facing full south. They wanted water, the thermometer went up to 100°, and the whole lot perished as completely as if they had been put over a lime-kiln. They ought then to have been standing in pans, and the pans filled with fresh short dung, and the plants allowed to root through to the moist nitrous manure to swell their fruit, and keep them sturdy till it was ripened. The placing of the pans was deferred, a moment of hard trial came, and the leaves fell like bundles of rags, and never rose again.

Here we remember a remark we were about to make on plants of marshy and half-aquatic habit grown in pots. Ordinary watering is not sufficient; they should stand in water while kept by force of weather at a high temperature; but beware of plunging any potted plant, though it be the thirstiest of the thirsty, to the rim. Two inches depth is plenty for the largest-sized; this will at least keep the crocks quite wet, and the roots will drink all they require by capillary attraction. We have found in growing grasses, sedges, ferns, and other plants that habitually locate themselves on the margins of ponds and streams, that to plunge them deep was unsafe, but to stand them on inverted pots in tanks or ornamental water gave them a vigour unattainable by any other method. All kinds of emergencies occur at this time of year in places where the work is heavy, and one not unfrequent is the necessity to give water under glass while the sun shines fiercely. Such a time should never be chosen for watering; but if it must be done, shut up first, and as long as you do not give air you may use water with impunity.

As a rule, plants of rapid seasonal growth, which usually have long periods of rest, need an abundant supply of water during the period of their activity. Young gardeners are apt to think that plants especially fond of water need not be so carefully drained as those of drier habit, but this is a dangerous fallacy. In potting plants that are to be liberally supplied with drink, it would be safer to use a handful or more extra crocks than to use any less than the sized pot would ordinarily require, for a soddened state of the soil causes it to become sour, and then there can be little hope of a healthy growth. The frequent passage of water through the soil in a pot well drained will certainly wash the goodness out of it, but that may be made amends for by mulching with fresh sheep or goats' dung, or by occasional thin sprinklings of guano, or even of a mixture of soot and salt; the last-named stimulant to be used with caution, and never in greater quantity at a time than to just make a film on the surface. Stove plants badly drained suffer most of any, because the high temperature causes the soil to sour immediately if holding stagnant water, and plants newly shifted must have the help of the syringe, and by causing a dew in the house by wetting the pavement and the beds, rather than

keep the roots too wet before they have got to work in their new material. One more remark must be sufficient for the present. Ground well kept, not allowed to get baked into a hard crust, kept open with the hoe, and liberally mulched, will suck in all the rain that falls, and at this time of the year the showers are sometimes short and sudden; but where the soil is as hard as a brick and as close as a pavement, every drop will run off and be lost for the benefit of the drains and pools, mayhap a mile away.

NOTES OF THE MONTH.

ROYAL HORTICULTURAL, June 5th.—This was an event to be remembered both for its importance in the history of contemporaneous horticulture, and its grandeur and completeness as a public spectacle. There had been heavy rain, a little thunder, but by the time the company began to arrive, the walks were dry, the grass not too wet for the foot, and the magnificent scene all the fresher and brighter for the shower. The gates were thrown open at one o'clock; by that time there was an immense throng ready to take possession of the grounds. Though the evidences of incompleteness were in many places more than visible, for to quit the main walks was to run the risk of getting knee-deep in mud, the main features of the garden presented a tone of finish and beauty such as the most sanguine could scarcely have expected who a few weeks previously had taken note of the immense amount of work that had to be accomplished, even to make ready for a formal opening. The exhibition in the grand conservatory was the chief object of interest to the majority of the visitors, and it was such an exhibition as it rarely falls to the lot even of London gardeners to behold. The colonnades were decorated with ornamental plants and fruits in massive groups, conspicuous amongst which were pelargoniums in the very first style of show culture. At four o'clock the gates were closed and a procession formed. In the procession were the foremen of gardeners and works, the contractors, superintendent, members of committees, Her Majesty's Commissioners for the Exhibition of 1851, the council and vice presidents of the Society, and the distinguished visitors, at the head of them H. R. H. Prince Albert, the president of the Society. During the procession the bands played the National Anthem and the Cobourg March. On arriving at the Conservatory, Dr. Lindley, the secretary, read an address in which the history of the Society was succinctly narrated. To this His Royal Highness made a reply. The Bishop of London then read the collect for the day and offered up a prayer adapted to the occasion. The Prince Consort then declared the garden to be opened, and the procession moved off amid cheers towards the spot chosen for the planting of a memorial Wellingtonia near the south end of the northern terrace on the east. The tree was presented for the purpose by Messrs. Veitch. The Prince Arthur, Princess Mary, and the Duke of Cambridge, each had their turn in shovelling earth upon the roots of the tree, and in a very brief space of time it was royally planted. As the prize list in this particular case is of great importance, and will be valuable for reference hereafter, we depart from our usual plan and give it entire; for if we attempt to characterize the respective excellences of the contributions we must occupy a disproportionate amount of space, and even then pass over many things deserving of high praise.

AWARDS OF THE JUDGES.—FLOWERS.—CLASS 1.—Fifteen Stove and Greenhouse Plants. (Open.) 1st prize to W. May, J. Spode, Esq., Rugeley, 20l.; 2nd ditto to B. Peed, J. Treadwell, Esq., Norwood, 15l.

CLASS 2.—Twelve Stove and Greenhouse Plants. (Nurserymen.) 1st prize to J.

and J. Fraser, Lea Bridge Road, 12*l*. ; 2nd ditto to W. Cutbush, jun., Barnet, Herts, 9*l*. ; 3rd ditto to O. Rhodes, Sydenham, 6*l*.

CLASS 3.—Nine Stove and Greenhouse Plants. (Amateurs.) 1st prize to H. Chillum, Mrs. Smith, Ashstead, 10*l*. ; 2nd ditto to J. Green, Sir E. Antrobus, Bart., Cheam, 8*l*. ; 3rd ditto to R. Baxendine, W. H. Smallpiece, Esq., Guildford, 6*l*. ; 4th ditto to Wm. Kaile, Earl of Lovelace, Ripley, 4*l*.

CLASS 4.—Six Stove and Greenhouse Plants. (Amateurs.) 1st prize to T. Page, W. Leaf, Esq., Streatham, 6*l*. ; 2nd ditto to J. Tegg, Baron Hambro', Roehampton, 5*l*.

CLASS 5.—Twelve Fine Foliaged and Variegated Plants. (Nurserymen.) 1st prize to J. Veitch and Sons, Exeter and Chelsea, 10*l*. ; 2nd ditto to B. L. Williams, Holloway, 7*l*. ; 3rd ditto to T. Jackson and Son, Kingston, 5*l*. ; extra ditto to J. and C. Lee, Hammersmith, 3*l*.

CLASS 6.—Ten Fine Foliaged and Variegated Plants. (Amateurs.) 1st prize to H. Hamilton, T. P. W. Butt, Esq., Cheltenham, 10*l*. ; 2nd ditto to A. H. Gunner, W. F. Wooley, Esq., Kensington, 7*l*. ; 3rd ditto to C. Hutt, Miss Burdett Coutts, Highgate, 5*l*. ; 4th ditto to G. Young, W. H. Stone, Esq., Dulwich, 3*l*. ; extra ditto to G. Nicholson, Bushy Grove, Watford, 2*l*.

CLASS 7.—Six Dracænas and Cordylines. (Open.) 1st prize to J. Veitch and Son, Exeter and Chelsea, 3*l*. ; 2nd ditto to J. and C. Lee, Hammersmith, 2*l*. ; 3rd ditto to W. Bull, F.R.H.S., Chelsea, 1*l*. ; extra ditto to G. Young, W. H. Stone, Esq., Dulwich, 10*s*.

CLASS 8.—Twenty Orchids. (Amateurs.) 1st prize to Mr. Stone, Tottenham, 20*l*. ; 2nd ditto to B. Peed, T. Treadwell, Esq., Lower Norwood, 15*l*.

CLASS 9.—Sixteen Orchids. (Nurserymen.) 1st prize to J. Veitch and Son, Exeter and Chelsea, 15*l*. ; 2nd ditto to S. Wooley, Cheshunt, Herts, 10*l*. ; special ditto to O. Rhodes, Sydenham, 3*l*. 10*s*.

CLASS 10.—Ten Orchids. (Amateurs.) 1st prize to G. Baker, A. Bassett, Esq., Stamford Hill, 10*l*. ; 2nd ditto to F. Lovell, H. E. Gurney, Esq., Nutfield, 7*l*. ; 3rd ditto to C. Penny, H. M. Gibbs, Esq., Regent's Park, 5*l*. ; 4th ditto to E. M'Morland, J. Spode, Esq., Hampstead, 3*l*.

CLASS 11.—Orchids. Single specimens. (Open.) 1st prize to R. Warner, Broomfield, 3*l*. ; 2nd ditto to B. S. Williams, Holloway, 2*l*. ; 3rd ditto to J. H. Hedge, F.R.H.S., Ipswich, 1*l*.

CLASS 12.—Nine Greenhouse Azaleas. (Amateurs.) 1st prize to T. Page, W. Leaf, Esq., Streatham, 12*l*. ; 2nd ditto to S. M. Carson, Cheam, 10*l*. ; 3rd ditto to J. Green, Sir E. Antrobus, Bart., Cheam, 7*l*. ; 4th ditto to B. Peed, T. Treadwell, Esq., Norwood, 5*l*.

CLASS 13.—Nine Greenhouse Azaleas. (Nurserymen.) 1st prize to C. Turner, Slough, 9*l*. ; 2nd ditto to J. and J. Fraser, Lea Bridge Road, 7*l*.

CLASS 14.—Six Greenhouse Azaleas. (Amateurs.) 1st prize to W. May, J. Spode, Esq., Rugeley, 6*l*.

CLASS 15.—Nine Greenhouse Azaleas, new kinds. (Open.) 1st prize to C. Turner, Royal Nurseries, Slough, 6*l*. ; 2nd ditto to Ivery and Son, nurserymen, Dorking, 4*l*.

CLASS 16.—Six Rhododendrons, distinct. (Open.) 1st prize to Charles Noble, Sunningdale, Bagshot, 5*l*. ; 2nd ditto to John Standish, Bagshot, Surrey, 4*l*.

CLASS 17.—Rhododendrons, Sikkim or Bhotan. (Open.) 1st prize to A. Henderson and Co., Edgware Road, 4*l*.

CLASS 18.—Fifteen Roses in Pots, distinct. (Open.) 1st prize to Messrs. Lane and Son, Great Berkhamstead, Herts, 15*l*. ; 2nd ditto to W. Paul, Cheshunt Nurseries, 10*l*. ; 3rd ditto to E. Francis, nurseryman, Hertford, 7*l*.

CLASS 19.—Ten Roses in Pots, distinct. (Amateurs.) 1st prize to Thomas Terry, M. W. Giles Puller, Esq., Youngsbury, 10*l*. ; 2nd ditto to Alexander Rowland, F.R.H.S., Lewisham, 7*l*.

CLASS 20.—Twelve New Roses in Pots, two of kind admitted. (Open.) 1st prize to Messrs. Paul and Son, Cheshunt Nurseries, Herts, 5*l*. ; 2nd ditto to W. Paul, Cheshunt, Herts, 4*l*.

CLASS 21.—Six Tall Cacti. (Open.) 1st prize to J. Green, Cheam, 5*l*. ; 2nd ditto to W. Young, Highgate, 4*l*.

CLASS 22.—Six Cape Heath. (Open.) 1st prize to B. Peed, T. Treadwell, Esq., Norwood, 5*l*. ; 2nd ditto to T. Jackson and Son, Kingston, S.W., 4*l*. ; 3rd ditto to W. May, J. Spode, Esq., Rugeley, 3*l*. ; extra ditto to R. Baxendine, W. H. Smallpiece, Esq., Guildford, 2*l*. ; extra ditto, to T. Page, W. Leaf, Esq., Streatham, 1*l*. 10*s*.

CLASS 23.—Nine Pelargoniums, distinct. (Amateurs.) 1st prize to W. Nye, E.

Forster, Esq., Clewer, 8*l.*; 2nd ditto to T. Bailey, Shardeloes, Amersham, 6*l.*; 3rd ditto to J. Shrimpton, A. F. Doxat, Esq., Putney Heath, 4*l.*; 4th ditto to J. Weir, Hampstead, 2*l.*

CLASS 24.—Twelve Pelargoniums, distinct. (Nurserymen.) 1st prize to C. Turner, Royal Nurseries, Slough, 8*l.*; 2nd ditto to J. Dobson and Son, Isleworth, 6*l.*; 3rd ditto to J. and J. Fraser, Lea Bridge Road, 4*l.*; 4th ditto to T. Windsor, Hampstead, 2*l.*; extra ditto to T. Gaines, nurseryman, Battersea, 1*l.*

CLASS 25.—Six Fancy Pelargoniums, distinct. (Amateurs.) 1st prize to T. Bailey, Amersham, 5*l.*; 2nd ditto to J. Weir, Hampstead, 4*l.*; 3rd ditto to J. James, F. W. Watson, Esq., Isleworth, 3*l.*

CLASS 26.—Nine Fancy Pelargoniums, distinct. (Nurserymen.) 1st prize to C. Turner, Royal Nurseries, Slough, 5*l.*; 2nd ditto to J. and J. Fraser, Lea Bridge Road, 4*l.*; 3rd ditto to Dobson and Son, Isleworth, 3*l.*; 4th ditto to T. Windsor, Hampstead, 1*l.* 10*s.*

CLASS 27.—Nine Spotted Pelargoniums, distinct. (Open.) 1st prize to Charles Turner, Royal Nurseries, Slough, 5*l.*

CLASS 28.—Nine Variegated Begonias, distinct. (Open.) 1st prize to J. Veitch and Son, Exeter and Chelsea, 5*l.*; 2nd ditto to W. Lakeman, Heddon, 4*l.*; 3rd ditto to A. Henderson and Co., Edgware Road, 3*l.*; 4th ditto to B. S. Williams, Holloway, 1*l.* 10*s.*

CLASS 29.—Six Tree Ferns. Duplicates admitted. (Open.) 1st prize to J. Veitch and Son, Exeter and Chelsea, 5*l.*; 2nd ditto to C. Hutt, Miss Burdett Coutts, Highgate, 4*l.*; 3rd ditto to J. Standish, Bagshot, 3*l.*

CLASS 30.—Twelve Exotic Ferns (Amateurs.) 1st prize to J. Stone, Tottenham, N., 6*l.*; 2nd ditto to R. Baillie, Harrow Road, 5*l.*; 3rd ditto to H. Lavey, Hatcham, Surrey, 4*l.*; 4th ditto to S. M. Carson, Chesham, 2*l.*

CLASS 31.—Twelve Exotic Ferns. (Nurserymen.) 1st prize to B. S. Williams, Holloway, 5*l.*; 2nd ditto to J. Veitch and Son, Exeter and Chelsea, 4*l.*; 3rd ditto to R. Sim, Foot's Cray, Kent, 2*l.*; 4th ditto to Milne and Co., Wandsworth Road, 1*l.*

CLASS 32.—Six Anæctochilus and Variegated Leaved Orchids. (Open.) 1st prize to J. Veitch and Son, Exeter and Chelsea, 3*l.*

CLASS 33.—Three Tuberos Tropæolums, trained, distinct. (Open.) No competition.

CLASS 34.—New, or Extremely Rare Plants in Flower. 1st prize to R. Warner, for *Lælia grandis*, S. K.; 2nd ditto to J. Pilbeam, for *Dendrobium* sp., S. B.; 2nd ditto to J. Veitch and Son, for *Stenogaster concinna*, ditto; 2nd ditto to M. Linden, Brussels, for *Campylobotrys pyrrophylla*, ditto; 3rd ditto to Messrs. E. and G. Henderson, for *Convolvulus mauritanicus*, M.; 3rd ditto to J. Veitch and Son, for *Mimulus cupreus*, M.; 3rd ditto to J. Veitch and Son, for *Calceolaria bellidifolia*, M.

CLASS 35.—Hardy Ornamental Plants, New Sp. 1st prize to J. Standish, for *Sciadopitys verticillata*, S. K.; 1st ditto to J. Veitch and Son, for *Libocedrus tetragona*, S. K.; 2nd ditto to J. Standish, for *Retinospora obtusa*, S. B.; 2nd ditto to J. Standish, for *Thujaopsis dolabrata*, var. S. B.; 2nd ditto to J. Veitch and Son, for *Acer polymorphum atropurpureum*, S. B.; 3rd ditto to J. Veitch and Son, for *Thuja pygmaea*, M.; 3rd ditto to J. Veitch and Son, for *Cryptomeria* sp., Japan, M.; 3rd ditto to T. Jackson and Son, for *Juniperus drupacea*, M.; 3rd ditto to J. Standish, for *Retinospora obtusa variegata*, M.; 3rd ditto to J. Standish, for *Podocarpus variegatus*, M.; 3rd ditto to J. Standish, for *Acuba japonica*, mas. et fem. M.; 3rd ditto to J. Standish, for *Bambusa variegata*, M.; 3rd ditto to J. Veitch and Son, for *Picea* sp. (Vancouver's Island), M.

CLASS 36.—Wardian Cases filled with Plants. 1st prize to J. Veitch and Son, Exeter and Chelsea, 5*l.*; 2nd ditto to John Standish, Bagshot, 3*l.*; 3rd ditto to Robert Baillie, W. C. Carbonell, Esq., Harrow Road, 2*l.*

CLASS 37.—Miscellaneous, for Plants not specially named. 1st prize to J. Veitch and Son, Exeter and Chelsea, 2*l.* 10*s.*; 1st ditto to Carl Pfersdorff, Kensal New Town, 2*l.* 10*s.*; 2nd ditto to John Standish, Bagshot, 2*l.*; 2nd ditto to W. Paul, Waltham Cross, 2*l.*; 2nd ditto to H. Lavey, E. A. De Grave, Esq., Fetcham, Surrey, 2*l.*; 2nd ditto to John Standish, Bagshot, Surrey, 2*l.*; 2nd ditto to J. Veitch and Son, Exeter and Chelsea, 2*l.*; 2nd ditto to M. Linden, Brussels, 2*l.*; 2nd ditto to M. Linden, Brussels, 2*l.*; 2nd ditto to M. Linden, Brussels, 2*l.*; 2nd ditto to M. Linden, Brussels, 2*l.*; 2nd ditto to M. Linden, Brussels, 2*l.*; 3rd ditto to M. Linden, Brussels, 1*l.* 10*s.*; 3rd ditto to B. S. Williams, nurseryman, Holloway, 1*l.* 10*s.*; 3rd ditto to Robt. Baillie, W. C. Carbonell, Esq., Harrow Road, 1*l.* 10*s.*; 4th ditto to Jas. Burley, Limpsfield, Surrey, 1*l.*; 4th ditto to Mr. C. Turner, Slough, 1*l.*; extra ditto to J. Standish, Bagshot (*Toodea pellucida*), 15*s.*; extra ditto to Paul and Son, Cheshunt, Herts, 15*s.*; extra ditto to Dobson and Son, Woodlands Nur-

sery, Isleworth, 15s.; extra ditto to Ivery and Son, Dorking and Reigate, 15s.; extra ditto to C. Leach, Clapham Park, 15s.; extra ditto to B. S. Williams, Holloway, 15s.; extra ditto to Thos. Baines, Summerfield, Bowden, Cheshire, 10s.

FRUITS.—CLASS A.—Collection of Fruit. Nine Dishes of six distinct kinds. 1st prize to T. Ingram, Royal Gardens, Windsor, 6*l*.; 2nd ditto to A. Henderson, Trentham, 5*l*.

CLASS B.—Pine Apple. The best Queen. 1st prize to T. Bailey, Amersham, 3*l*.; 2nd ditto to T. Young, C. Bailey, Esq., M.P., 2*l*.; 3rd ditto to R. Ruffett, Brockett Hall, Herts, 1*l*.

CLASS C.—Pine Apple. The best Cayenne. 1st prize to T. Page, Streatham, 3*l*.; 2nd ditto to T. Ingram, Frogmore, 2*l*.; 3rd ditto to C. F. Harrison, Weybridge, 1*l*.

CLASS D.—Pine Apple. Any variety not Queen or Cayenne. 1st prize to T. Young, C. Bailey, Esq., 3*l*.; 2nd ditto to R. Ruffett, Brockett Hall, Herts, 2*l*.; 3rd ditto to T. Bailey, Amersham, 1*l*.

CLASS E.—Grapes, Black. Single Dish. 1st prize to W. Hill, Keele Hall, Staffordshire, 3*l*.; 2nd ditto to C. Little, A. Darley, Esq., Slough, 2*l*.; 2nd ditto to J. Fleming, Clevedon, 2*l*.; 3rd ditto to J. Drewitt, Mrs. Cubitt, Dorking, 1*l*.; 3rd ditto to G. G. Wortley, Hon. P. Carey, Norwood, 1*l*.; 3rd ditto to M. Henderson, Ashby-de-la-Zouch, 1*l*.; extra ditto to H. Payne, Chelmsford, 10s.; extra ditto to G. Tillyard, Stanmore, 10s.; extra ditto to T. Frost, Aylesford, 10s.

CLASS F.—Grapes, White Muscat. Single Dish. 1st prize to H. Baker, Belgrave, Leicester, 3*l*.; 2nd ditto to R. Ruffett, Brockett Hall, Herts, 2*l*.; 3rd ditto to J. Standish, Bagshot, 1*l*.; 4th ditto to R. Turnbull, Woodstock, 10s.

CLASS G.—Grapes, White (not Muscat). Single Dish. 1st prize to W. Hill, Keele Hall, Staffordshire, 3*l*.; 2nd ditto to J. Allport, H. Ackroyd, Esq., Nantwich, 2*l*.; 3rd ditto to H. Baker, Belgrave, Leicester, 1*l*.; 3rd ditto to F. W. Durrant, Hon. Colonel Duncombe, St. Neot's, 1*l*.; extra ditto to Thomas Bailey, Shardeloes, Amersham, 10s.

CLASS H.—Peaches. Single Dish. 1st prize to A. Henderson, Trentham, 3*l*.; 2nd ditto to John Fleming, Dowager Duchess of Sutherland, Clevedon, Maidenhead, 2*l*.; 2nd ditto to A. Sanders, Sir H. Meux, Waltham Cross, 2*l*.; 3rd ditto to F. W. Durrant, Hon. Colonel Duncombe, St. Neot's, 1*l*.; 3rd ditto to C. Little, A. Dawley, Esq., Stoke Ct., Slough, 1*l*.; extra ditto to J. Peacock, Stockwood, Luton, Beds, 5s.; extra ditto to J. Cross, Lord Ashburton, Alresford, Hants, 5s.

CLASS I.—Nectarines. Single Dish. 1st prize to M. Rochford, Tottenham, 3*l*.; 2nd ditto to J. Peacock, Stockwood, Luton, Beds, 2*l*.; 2nd ditto to A. Henderson, Trentham Hill Gardens, 2*l*.; 3rd ditto to W. Hill, R. Sneyd, Esq., Keele Hall, Staffordshire, 1*l*.; 3rd ditto to S. Evans, C. N. Newdegate, Esq., M.P., Nuneaton, 1*l*.; extra ditto to J. Oates, Stoneleigh Abbey, Kenilworth, 5s.; extra ditto to C. Little, A. Dawley, Esq., Stoke at Slough, 5s.; extra ditto to T. Rawbone, R. T. Adderley, Esq., Stone, Stafford, 5s.

CLASS J.—Figs. Single Dish. 1st prize to J. Alresford, 2*l*.; 2nd ditto to S. Snow, Countess Cooper, Silsoe, Beds, 1*l*.; 3rd ditto to R. Ruffett, Brockett Hall, Herts, 10s.

CLASS K.—Cherries. Single Dish. 1st prize to A. Henderson, Trentham, 3*l*.; 2nd ditto to S. Evans, C. N. Newdegate, Esq., M.P., Nuneaton, 1*l*.; 3rd ditto to Thomas Jackson and Son, Kingston, S.W., 10s.

CLASS L.—Strawberries. Three Dishes, distinct. 1st prize to R. Smith, Twickenham, 3*l*.; 2nd ditto to R. Turnbull, Blenheim, 2*l*.; 3rd ditto to F. W. Park, Grove Hall, Notts, 1*l*.; extra ditto to A. Ingram, J. J. Blandy, Esq., Reading, 5s.

CLASS M.—Strawberries. Single Dish. 1st prize to R. Smith, Twickenham, 1*l*. 10s.; 2nd ditto to T. Ingram, Frogmore, 1*l*.; 3rd ditto to W. F. Park, Grove Hall, Notts, 10s.

CLASS N.—Strawberries in Pots. Six Plants. 1st prize to R. Smith, Twickenham, 2*l*.; 2nd ditto to W. Kaile, Earl of Lovelace, Ripley, 1*l*.; 3rd ditto to F. W. Park, G. H. Vernon, Esq., Grove Hall, Notts, 10s.; extra ditto to T. Reid, Sydenham, 5s.

CLASS O.—Melons. Green-fleshed. 1st prize to J. Meredith, Garston, near Liverpool, 2*l*.; 2nd ditto to T. Frost, Preston Hall, Kent, 1*l*.; 3rd ditto to Rev. J. Philpott, Porthyriden, Truro, 10s.; extra ditto to A. Saunders, Sir H. Meux, Theobald's Park, 5s.; extra ditto to W. McLellan, Barnet, 5s.

CLASS P.—Melons. Scarlet-fleshed. 1st prize to T. Frost, Preston Hall, Kent, 2*l*.; 2nd ditto to T. Kempster, E. Greaves, Esq., M.P., Barford, Warwick, 1*l*.; 3rd ditto to J. Meredith, Garston, near Liverpool, 10s.

CLASS Q.—Vines in Pots. Four Plants. 1st prize to A. Sanders, Sir H. Meux, Theobald Park, 4*l*.; 2nd ditto to J. Masters, Earl of Macclesfield, Tetsworth, 3*l*.; 3rd

ditto to J. Standish, Bagshot, 2/; 3rd ditto to C. Hutt, Miss Burdett Coutts, Highgate, 2/.

CLASS R.—Miscellaneous. Prize to J. Standish, Bagshot, 1/ 10s.; ditto to J. Standish, Bagshot, 1/; ditto to J. Luscombe, F.R.H.S., Kingsbridge, 1/; ditto to T. Lunt, Greenock, 1/; ditto to H. Payne, Chelmsford, 1/; ditto to J. Henderson, Trent-ham, 1/; ditto to W. Kaile, Ripley, 10s.; ditto to R. Crawshay, Merthyr Tydvil, 10s.

SPECIAL PRIZES offered by W. C. Dilke, Esq., V.P.R.H.S. List of Competitors:—Margaret Webber and Co.; Lady Rokeby, 2nd prize, 5/; Lady Caroline Kerrison, 3rd prize, 3/; Edward Shenton, William Kaile; Messrs. Elkington and Co., 4th prize, 2/; James Cross, Lady T. Schuster; Mr. T. Jones, highly commended; Mrs. C. Pritchard, extra prize; Miss Kate Darter, Lady E. Quel, highly commended; Miss Winckworth; Thomas Charles March, 1st prize, 10/; Richard Yates, Mrs. H. Grazebrook, William Alcock, Mr. R. Helbronner, Mrs. M. Johnston; Lady Trowbridge. Highly commended, Mrs. Carnett.

ROYAL OXFORDSHIRE HORTICULTURAL, June 11th.—This was the commemoration fête, and formed part of the general annual rejoicing to which, at this season of the year, the people of the university city abandon themselves. It was the third show of the society, and was held in Trinity College Gardens. The tents were well filled, and there was no lack of visitors to appreciate the excellent display, spite of the drenching rain which set in when the affair was just at its best. Geraniums were the most attractive feature, and generally they were as well done as we are accustomed to see them at Regent's Park and other of the London shows. In the class for All England, Mr. Ingram, gardener to J. J. Bland, Esq., of Reading, was placed first for stove and greenhouse plants; W. Undershell first for Cape heaths; Mr. C. Turner first for geraniums in both classes. In members' prizes, J. Morrell, Esq., was first for eight stove plants, and W. Undershell, Esq., first for six. Azaleas were so below the mark that the first prize was withheld. Among the rarities we may name a charming lot of ranunculuses; Mr. W. Molyneux, in the class for eighteen, was first, Mr. T. Hawes second, Mr. C. Long third, Mr. W. Gammon fourth. The nines were more largely competed for, and such a liberal show of this most perfect of florists' flowers was quite refreshing to the few amongst the company who could remember what floriculture was five and twenty years ago. Fruits and vegetables were generally good, and in the amateur classes thorough good culture was evidenced in the character of the productions.

BUCKINGHAM HORTICULTURAL.—The twenty-ninth annual meeting of this flourishing society will be held on the 30th. The schedule is admirably planned, so as to give many prizes of moderate value instead of a few at high rates. Among the special subjects there will be three for the best garlands, two for the best bouquets of wax flowers, three for the best designs for gardens, two for collections of wild flowers, and a distinct set of prizes beside for growers resident in seven of the surrounding districts. We cannot but wish for fine weather and unexampled success.

STAMFORD.—The first exhibition this season will take place on the 3rd, the second on the 12th of September. At the first show two silver cups will be awarded for roses; a stand of wax flowers, value three guineas, will be given for the best vase of flowers for the table. The rest of the prizes are well arranged to insure brisk competition.

CRYSTAL PALACE.—We had intended to describe this month the details of the bedding, but on our last visit the arrangements were far from complete, and, generally speaking, the appearance of the ground was poor and meagre; certainly not as the public expect it to be in such a favourable season. Perhaps this ridiculous and inappropriate Blondin excitement will be trusted to for supplies to the exchequer. We feel assured that if the directors reduce their grounds to the level of Cremorne, the popularity of the Crystal Palace will assume a form not to be envied.



FLOWER-GARDENING AT KEW.

THERE are but few places where the public can see flower-gardening on a large scale gratuitously. True, there are flower-beds in the parks, and there is that fine old garden at Hampton Court; but the school in which the people may best study artistic flower-gardening is, undoubtedly, the Royal Botanic Garden at Kew. In that establishment, which is in every way worthy of the nation which supports it, this beautiful art is carried out most thoroughly. We do not, indeed, find many of the newest varieties used in filling the beds, for it is much better to depend upon plants whose useful qualities have been well tested; but, as we shall presently see, the latest improvements in the mode of planting the beds are followed out. We no longer find beds planted with one kind of plant; almost every one is edged with a plant which shall enhance the beauty of the other; and in many beds we find several varieties, the colours of which blend or contrast with each other most artistically.*

We proceed to lay before our readers a few notes upon the manner in which the beds are filled, made on a recent visit to this garden. We may, in passing, observe that the houses were as full of flowers and of interesting plants as usual; and the beds of rhododendrons, azaleas, and other flowering shrubs were perfect masses of brilliant colour. In walking through the garden, it was difficult to believe that we have but recently passed through such a severe winter, scarcely any of the trees and shrubs show the effects of the frost.

It will be recollected that, along the principal promenade, the beds are arranged with a circle on each side of an oblong, making a group of three beds on either side; then there is another rectangular bed, and then the group of three is repeated through the whole length. The beds are, of course, made to correspond on either side of the broad gravel path. The first four circles, two on each side, are perfect bouquets. The centre is a large old plant of the Golden Chain geranium; from this extend four rays of Baron Hugel, the spandrels are filled with Lady Plymouth, and the whole edged with lobelia and *Gazania splendens*. The oblong is filled with Lord Raglan verbenas, edged with *Cerastium tomentosum*. Then comes an oblong bed filled with *Calceolaria amplexicaulis*, three rows along the centre; two rows of *Perilla Nankinensis* on either side, and edged with variegated mint mixed with Mangle's variegated geranium. The

circles of the second group are planted with heliotrope and *Ageratum Mexicanum* mixed. There are two rows of Flower of the Day geranium along the centre of the oblong bed, with two rows of Brilliant geranium, and two of Purple King verberna to finish with. This is a very effective bed, and is frequently repeated in other parts of the garden. The next bed is filled with dwarf standard roses, mignonette is coming up among them, and there is an edging of stocks. The circles of the next group are filled with perilla, edged with Mangle's variegated geranium, with an outer line of *Gazania splendens*. The rectangular bed is planted with Punch geranium (this scarlet has superseded almost all the rest here, as it seems to suit the locality); the bed is edged with the common variegated mint. There are three rows of verberna Purple King along the centre of the next bed, then two lines of *tropæolum* Tom Thumb, and an edging of *cerastium*. Then come two more circles filled with verberna Moonlight and Lord Raglan, and an oblong of *Calceolaria amplexicaulis* edged with Purple King. Then come more roses, treated as before; and by the side of some paths which here intersect the principal walk, some beds of dahlia Zelinda, edged with two rows of *Calceolaria aurea floribunda*, and a few others which are repetitions of beds previously described. Still following the promenade, we come to the next circular beds, which are planted with verberna Lord Raglan, edged with Moonlight; and an oblong of *Calceolaria amplexicaulis*, surrounded by a double line of Purple King verberna. Then a bed of Purple King, *tropæolum* Tom Thumb, and *cerastium*. The next circles are filled with purple orach (*Atriplex hortensis rubra*); this is at present of a very bright crimson colour, quite as effective, but not so sombre-looking, as perilla. A friend of ours who had employed this latter plant rather too freely last year, appeared to have put his garden into mourning. The bed of which we were speaking is surrounded with Mangle's variegated geranium, which shows up the colours well by contrast. This is followed by a bed of geranium Punch, edged with variegated mint. Then more roses, and then the circles of heliotrope and *ageratum*, with *Tropæolum splendens*. Then a repetition of the Flower of the Day and Brilliant bed, and then an oblong with three rows of *Calceolaria amplexicaulis* along the centre, with two of perilla and two of Mangle's geranium. The next cir-

cles are of French marigold, with a mixed edging of gazania and lobelia. The oblong here is filled with verbena *Brilliant de Vaise*, with a single line of the gray *Stachys lanata* round it. This brings us to the termination of the grand promenade near the lake; it is here intersected by another path which leads on the right to the Palm House, and on the left to the New Museum. The large circular bed which is intersected by the four paths is planted with two rows of ageratum, two of Punch, and a broad edging of cerastium. This ring is much more effective than when occupied entirely with scarlet geraniums. By the side of the path leading towards the Palm House there are several very pretty beds, the best of which is one of *Delphinium formosum*, well pegged down, and edged with cerastium. This larkspur is of a most brilliant and beautiful blue, but begins flowering earlier, and does not last so long as most of the bedding plants. It is perfectly hardy, and may be left in the ground all winter; indeed, is usually better in the second year than it is the first.

Although this series of beds by the side of the main walk is very beautiful, yet the floral display at Kew reaches its climax in the geometrical garden in front of the palm-stove, and between it and the lake. It is a difficult task to describe a flower-garden without giving a plan of it; but as there are more than 400,000 visitors to this garden every year, we may safely premise that a large proportion of our readers have seen it at some time or other; those who have not should take the earliest opportunity of doing so. This garden is open to the public every day in the year (Sundays included), with the one exception of Christmas-day. This flower-garden, then, is divided into two compartments, each of which is a counterpart of the other; and each of these might be again divided, so that one half should represent the other. The centre is occupied by a raised bed of somewhat quadrangular outline; a vase, supported by a pedestal, and filled with a bouquet of pe-largoniums, is placed in the middle. The bed is planted with *Flower of the Day*, bordered with *Baron Hugel*, four rays of which geranium strike upwards to the base of the pedestal; the whole edged with cerastium. The four corner beds are filled with *Tom Thumb* geraniums; between these, at either end, is a small circle of perilla, edged with *Golden Chain* (a very pretty contrast). The two long beds at the sides are of ageratum. The four principal scroll-figures, being too large to balance with the others if all of

one colour, are divided into three parts: one end, that next the centre, is planted with *Purple King* verbena; the middle with *Calceolaria amplexicaulis*, edged with *C. aurea floribunda*; and the circle, with which the other end terminates, with *Delphinium formosum*. Between these and the centre of the garden are two beds of *Lord Raglan* verbena; then a V-shaped bed, the point of which is occupied with ageratum, while the two arms are of *Geant des Battailes* verbena, finished with three lines of *Stachys lanata*. Beyond these two beds are two others of the same form, but smaller, filled with the variegated alyssum (*Koeniga maritima variegata*).

In front of the old museum there was formerly a set of beds having no particular design; they were, in fact, a part of the herbaceous garden originally, and as they were not well adapted for the display of bedding plants, the whole have been replaced by a very simple but effective design. There is, first, a long bed of about five feet in width planted as a ribbon-border; behind the centre of this is an oval, and two smaller beds to fill up the spandrels between it and the ribbon-bed. The whole of these are shut in by a line of ivy, the broad-leaved Irish variety. The bed is about eighteen inches in width, and the centre raised to about a foot above the level of the turf. The ivy is beginning to grow well, and when more fully expanded will produce a pretty effect. The ribbon-border is planted with a double row of perilla along the centre, then a line of *Senecio maritima* on either side, and then four lines of verbena, the first and third being *Mrs. Woodruff*, and the second and fourth *Purple King*. The oval is of geranium *Punch*, edged with lobelia and variegated alyssum mixed; the other two beds are of *calceolaria*. Beyond the line of ivy are some beds of carnations and others of dahlias, surrounded by the ribbon-grass (*Phalaris arundinacea*), which makes a very pretty and effective edging for beds of tall-growing plants, but it requires to be taken up and parted every year, or it will grow too strong.

These are the leading features in the flower-gardening of Kew, but there are numbers of other beds which one meets with singly or in groups. Many of these are planted with great taste, and some of them with newer plants; but as we have already written to a greater length than we intended, we must reserve all notice of them to some future time.

THE VIRTUES OF PEPPER.

CAYENNE pepper, made from the ripe pods of the *Capsicum annuum*, or Guinea pepper, enters largely (often unsuspected) into the soups, hashes, stews, meat-pies, and gravies that appear on English dinner tables; but its medicinal uses, in this country, are nearly confined to furnishing a gargle, which is found to be very efficacious in strengthening and restoring the voice when weakened or lost by a relaxed sore throat.

In the tropical countries from whence we procure capsicums, and where their cultivation is of the easiest kind, they are both abundantly used as an article of diet, and are employed as tonics and stimulants, externally as well as internally. Equatorial cookery is almost saturated with various peppers. Not the natives only, but European residents, find them beneficial, and even carry prejudice so far as to regard their favourite spices as *cooling*. Fermented liquors are prepared from them. Several sauces and pickles, consisting mainly of capsicum, exist, which are scarcely known except to persons who have dwelt in, or who have close correspondence with, hot countries.

A tropical labourer will eat a capsicum pod with his bread or his rice, just as in the south of Europe, a working man will make a meal of raw onions and garlic and bread; in the north of France, of bread and salad; in Germany, of bread and raw bacon or ham; in England, of bread and cheese, or, in maritime towns, of bread and cured fish uncooked. A *sweet* preserve is made with ripe capsicums; gathered green, they are pickled in vinegar, like capers or gherkins. The latter preparation is in some esteem with us; but we are altogether ignorant of the very strong broths or decoctions, made from capsicum, which the natives of the Indian Archipelago drink with pleasure to themselves, although a European would believe himself poisoned if he were to swallow a single spoonful. In the Portuguese settlements, these stomachic potions are called *Caldo di pimento*, or hot-pepper drink.

The Indian mode of preparing capsicum pods, as a seasoning for table use, is to dry them slowly, first in the shade, and afterwards mixed with flour in a vessel, by the aid of fire. They then cut them with scissors into very small shreds, and to every ounce of shredded pods they add a pound of the finest flour, and knead them with leaven into a dough or paste. When the lump is well fermented and risen, it is put into the oven; when baked, it is cut into

slices, and baked again, like biscuits; lastly, it is reduced to a fine powder, which is passed through a sieve. This powder, according to Oriental belief, is an admirable condiment; it excites appetite, helps digestion, and prevents the constitution from stagnating and languishing. The Mexicans make a small species of long-pepper, or Chili pepper, enter into the composition of their cakes and pastes of chocolate.

In medicine, another kind of pepper is used by Ethiopian negroes to cure the toothache. Slave-masters, in the Indian islands, use decoctions of the true Guinea pepper to wash the backs of negroes who have been flayed with the whip—not as an additional punishment and torture, but to prevent their wounds from gangrening. The West Indian doctors frequently employ the leaves of the allspice tree, or Jamaica pepper, in baths, for the legs of dropsical patients, and in fomentations for limbs attacked by paralysis. Black pepper (that which the Dutch bring from the islands of Java, Sumatra, Malabar, etc.), in powder, is an innocent agent for banishing insect parasites from the heads of children and grown-up persons; it is also excellent for the preservation of furs from the ravages of mites and of moths in their larva state; for no moth is known to devour hair or skin after it has once become a perfect insect. Galen vaunted pepper as good against intestinal worms; Dioscorides as a cure for fevers, which has been confirmed by modern practitioners, who give the pepper whole as well as in powder, and find that it possesses properties similar to those of quinine. Modern chemists have discovered that pepper contains a peculiar principle, which they call *piperine*. Pepper was also an important ingredient in several obsolete medicines and pills, which enjoyed in their day as high a renown as any of those which are glorified now in advertisements. From these facts, it is clear that certain spices afford an active curative agent, which may render great service in skilful hands; in unskilful ones, it might probably afford an additional illustration of the danger of playing with edge-tools.

The object of this paper is to publish a very elegant and useful application of the healing powers of capsicum, made by the late lamented Monsieur Charles William De Rheims, a gentleman of well-known learning and scientific attainments, residing in Calais, his native town. He liberally allows the writer to communicate to the world the mode of preparing this invaluable

addition to the domestic medicine-chest, desiring in return no other recompense than the credit of the invention and the association of his name with it. Any private individual, druggist or apothecary, is at liberty to make it, for home use or for sale; but common gratitude requires that it should be used, given away, or sold, by the sole name of DE RHEIMS'S PAPER. Had the inventor any intention of making money by it, as a patent medicine, he stands in no need whatever of the wind wherewith to blow an enormous puff. He might say that, having been attached, in a medical capacity to the army of Napoleon I., in Spain—that, having remained eleven years in the Peninsula, and having married a Spanish wife, he became acquainted with several valuable secrets of the Moorish pharmacopœa—that, in an Arabic manuscript, which for centuries had been a treasured heirloom in his wife's family, he discovered the precious recipe, et cetera. The reader perceives how very brazen a trumpet might be sounded. M. De Rheims, being not a patent medicine vendor, but an amiable and benevolent gentleman, does nothing of the kind. The knowledge of the properties of pepper he derived from his maternal grandfather, Dr. St. Leger, who practised at Deal, in Kent, and who used pepper in powder for dressing wounds. The vehicle by means of which those properties are utilized is M. De Rheims's own idea.

This paper is simply an adhesive tissue-paper, applied to the part affected, after being moistened with saliva or water, and sticking wherever it is placed, exactly like a postage-stamp, only that the size and shape are arbitrary, and the substance of the material thinner. On moistening the paper with the tongue, you can taste the pepper it contains. De Rheims's paper is good, in the first place, for chilblains, *that are not broken*; if broken, the medical man should be sent for, and they must be treated with the usual surgical dressing. But for incipient chilblains, which are simply red and troublesome, which itch and sadly tease the patient, even preventing sleep, all that is necessary (after washing the feet or hands in warm salt and water), is to cover the parts affected with the sticking-paper, renewing it, if it falls off, till the cure is complete. The paper is a great blessing, from the mere circumstance that it allays the itching. But it does more; it stimulates the languid vessels of the skin and flesh, and the chilblain, in consequence, disappears.

Secondly, the De Rheims's paper is as efficacious for burns or scalds by heat as it

is in the curing of blains from cold. If the burn is very extensive and dangerous, and the skin is gone, no prudent person will trust to the remedies afforded by domestic medicine, but will send for a surgeon at once; but if the burn is only slight, comparatively, a piece of the paper instantly applied to the part will relieve the pain, prevent a blister from rising, and effect a rapid cure. The writer of this always carries a small supply of the paper in his portmonnaie, which often enables him to remedy disagreeable accidents that occur to himself or his friends. As he is, therefore, speaking of what he knows from practical and personal experience, he can, unhesitatingly, claim the reader's confidence in his present statement.

Thirdly, for a cut, in addition to the service rendered by other sticking-plasters in keeping the lips of a wound in contact and closed, it hastens the healing, and prevents sloughing and proud flesh. On a bruise, it causes the discolouration to disappear more rapidly; on a sprain, it helps the muscles and tendons to reassume their natural and healthy condition. In all this, there is no quackery or charlatanism; no secret nostrum is recommended; the beneficial effects promised simply result from the external application of a somewhat active vegetable tonic and stimulant. There is not, nor is there wished to be, the slightest mystery in the matter.

And now, as the marvellous paper is not yet to be purchased, the mode of preparation must be communicated. Dissolve gum arabic in water, so as to get a mixture about as thick as treacle; this is to be the vehicle of the medicinal agent, and to give the paper its quality of an adhesive plaister. Make also in another vessel a strong tincture of Cayenne pepper by steeping *capsicum pods* in twice their weight of spirits of wine. When the tincture is made, and the strength of the capsicums is well drawn out of them, pour it off upon the gum arabic, and mix *well* together with a small painter's brush. When the mixture is thoroughly blended, take sheets of the very thin paper called silk, India, or tissue paper, and with your brush give them one coat of the mixture, and let them dry; then give them a second coat on the same side, and let them dry again. If their surface is then smooth and shining, as if varnished, the process is complete; if not, a third coat must be given. But a little practice will teach the manipulator to make the mixture of gum and tincture of such a thickness that one coat shall almost always suffice.

When finished, all that is further re-

quired is to keep De Rheims's sticking-plaster in a dry place; otherwise, if allowed to get damp, the sheets would become glued together and unserviceable.

Those who like may prepare black silken tissue in the same way; it would then become a sort of medicated court-plaster.

E. S. D.

PROPERTIES AND CULTURE OF THE PETUNIA.

FOR a long time after its first introduction the petunia was looked upon as almost worthless; indeed, it has been compared to a "*mean weed*"—a comparison not much to be wondered at, looking back some few years at the flimsy appearance of the flower and the wretched foliage of the best varieties that were produced. At the present time there are to be found amongst novelties, where florists' properties are a secondary consideration, as many beautiful

dead, laying and lapping over and about for want of substance; the latter standing erect, with a convolvulus-like appearance, forming a perfect and symmetrical trumpet-like cup. Let us, then, abandon the word "*weedy*," and look to florists' points. The geranium has become a florist's flower. Why not the petunia? It is not less beautiful in its varied and vivid colours, and much longer continuance of bloom. To constitute a good petunia the characters

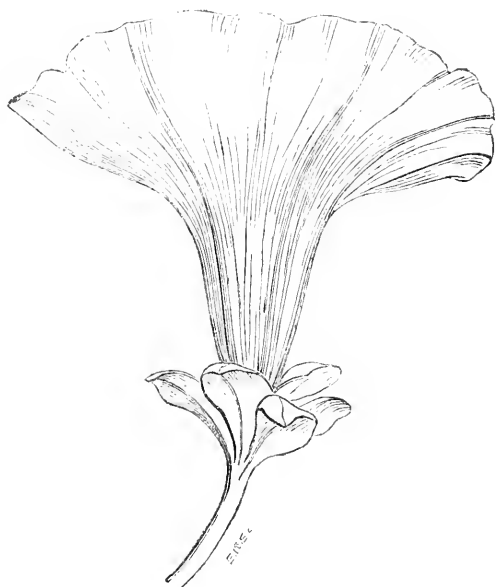


petunias as of any other class of decorative plants, their tints and markings being exquisite. But the want of substance and general deficiencies of form make them unsightly to the florist eye; but skill and cultivation must and will get over such difficulties. Indeed, when we look back to the old *Magnifica* and at the present *Phaeton* or to the old *Snowflake*, and the present *Fascination*, what a contrast—the former ones starchy, and apparently half-

should be as follows:—The flower should be as near a circular form as possible, merely showing five slight indentations on the outer edge, and which should lap over each other, making up the circumference, also indicating the size of petal. Secondly, the centre line or rib in each petal, which commences at the base of the tube at each division of the calyx, should be of sufficient substance to hold each petal in its proper form, also tapering from the base of the

tube to a point at the petal edge; otherwise, if not of sufficient strength, and too much indentation between each petal, the flower will have a flimsy appearance, as is the case with by far the greater number. On the other hand, too heavy a line is often observed, and this is nothing less than coarseness. Thirdly, the very beautiful pencilling and marking in the tube, the greater portion of which are on the upper part, should end abruptly, so to speak, that is, not to intrude on the surface of the flower, whether selfs, or flowers with white sulphur, dark violet, or purple tubes; otherwise than this is coarseness. Fourthly and lastly, the habit should be dwarf and free,

bred them for several years, my attention being first directed to them in 1843, and I have been a breeder of petunias more or less ever since, according to conveniences. Indeed, so confident have I been of the strain of flowers I should have, from my own hybridizing, that in 1857 I ventured to plant a bed in a conspicuous position wholly of seedlings. Although they differed in shape of bloom, they were all *purples*. And were I but a cottager, and nothing but my window for the raising of seeds, I should have a batch of seedling petunias; for the scent, though peculiar in many, is very sweet in others, and for bloom there is a succession from June until frost puts



what might be called a soft grower; if, on the contrary, hard wooded, they are very difficult to keep through the winter and to propagate. I am quite certain it is capable of being brought to a dwarf, shrubby, and compact habit, having myself, at the present season, seedlings of from six to eight inches high literally covered with bloom. These being cross-bred, I shall term Hybrid Dwarf Bedders—a style of growth so much wanted for bedding purposes as well as for pot culture, being alike desirable either for the conservatory or for beds and borders.

Free flowering scarcely need be added. I rarely ever saw one that was not free, if in a healthy growth at all, though I have

an end to it. But for those who have not convenience or practice in breeding, named varieties of course are best; and as the newest flowers are easily to be obtained, and are moderate in price, and are easily propagated, there is no excuse for not having a sufficient supply of the very best. But then it is said by some there is not a sufficient mass of bloom, at one time, to make it a bedding favourite. Is this the fault of the plant? I unhesitatingly answer, No. What, then, is it?—what makes them in a wet season run so much to growth, or in a dry season die off by exhaustion?

Take a set of plants, and plant them in a light compost, say, for instance, in a

border that has been enriched with decayed manure or a quantity of leaf-mould, supply plenty of water, and if the plants are trained perpendicular, they will soon be the same height as yourself. Again, if dry weather, the foliage will become small and scant. A deficiency of flowers, then, must be the result in both cases. What, then, will such experience teach us? Why, that the majority of the failures are owing to light soils. If they are planted in a good-holding loam, in wet seasons they cannot work too fast with their minute fibres; thus causing a sturdy growth, and, after three or four fine days, a mass of bloom. If, on

the contrary, a dry season, the holding quality of the loam supplies their small fibres with sufficient nourishment, so as to cause plenty of growth, also an abundance of bloom.

Such, then, are the results of practical observation and the experience of several years. For pot-culture, compost of three-fourths good holding loam, and one-fourth of leaf-mould, with a good sprinkling of silver-sand, and cool treatment, they grow fine, and are sure to repay for extra care and labour to the ardent admirer of nature and its flowers. JAMES HOLLAND,
Gardener to R. W. Fenke, Esq., Isleworth.

WORK AMONG THE ROSES.

GLORIOUS sunshine and dashing rains; what can be better for the gardener, if the sunshine is subdued where needful, and the top of the soil kept loose to let the rain in, instead of compelling it to run off. The storm of the 20th broke over the north side of London with absolute fury and the water chased down my garden like a mountain torrent; it overflowed the three wells that receive the drainage, made the pavement of a lean-to house now occupied with melons, cucumbers, and tomatoes in pots, into a ditch, and in order to shut up, my garden boy had to get bricks and throw them forward one at a time to make a dry footing; and how he grinned, it was delightful to behold. Next morning the water was all gone, and the wells were full only to within two feet of the surface, such was the capability of the ground to absorb it after a long continuance of burning sun. I saw that morning that the barometer had fallen the third of an inch, and the first thing I did was to mix a pailful of Parmentier's preparation to wash some plum trees that had suddenly broken out into a state of fly such as I never saw in my life before. My bush trees are rarely troubled with vermin, and this was the first outbreak of fly I had seen this season. My object in hurrying to dress the trees was that the approaching storm might wash them clean again, better than could be done with the syringe, and save the labour of syringing at the same time. The next thing was to put a few stakes to some bush roses that were toppling over with a mass of bloom altogether unusual, even with the free blooming sorts, and such a display of General Jacqueminot, Jules Margottin, Madame Vidot, Vicomtesse d'Avesne (N.), Geant des Batailles, and Baronne Prevost, I never had before.

But my rosery has been thinned a little. The winter killed off the centre bed described last year, in which all the plants were on briars in regular heights from circumference to centre. It also killed every one of the shoots on briars worked last season, and I had no stock in the place to make that bed good, and found it impossible to buy the sorts and quantities I wanted for it. So I cleared the bed out, filled it with peat from Wanstead, and planted it with rhododendrons and kalmias, and as far as mere effect goes, the dense mass of evergreens for a centrepiece is preferable to roses. The frost also killed all my tall standard Noisettes, with the exception of Triomphe de la Duchere, and Vicomtesse d'Avesne; these were on briars too, and most of the briars perished with the roses. *They might every one have been saved*; and there was sufficient warning in the excessive wet state of the ground; so whatever other folk think about the "cruel winter" in regard to the thinning of their roses, I am prepared to adopt the verdict of the jury in Joe Miller's stale anecdote, "serve him right." Let us take an example for the sake of instruction. My standard Aimée Viberts were as green as grass and in full bloom till the frost literally melted them at the tips of all the branches, and the flowers then had the appearance of having been boiled. A splendid pair of Ophirie with heads bigger, and the same shape as a chaise umbrella, were making new wood and blooming profusely far into December. These were warnings that the wood was not ripened; that the trees were not ready to rest, and *that they ought to have been lifted*. If served as we serve Teas; that is, if taken up and packed together by the heels in a place of shelter,

depend upon it the green sappy wood would have ripened a little, and their lives would have been spared.

The frost also carried off all my dwarf Chinas, making a clear sweep of the front row in my two large semicircles; but it spared nearly all other roses on their own roots. What a comment is that on the lessons that have been given in the FLORAL WORLD, and how it suggests the work of the season, namely, the propagation of roses by cuttings, layers, and eyes. But let us not forget the standards. I worked a few last year on Common Cabbage and Maiden's Blush for standards, and neither bud nor stock took any harm. These are not such gross feeders as the briar; hence I conclude that they escaped because not so gorged with sap, and from their natural disposition to go to rest earlier in the autumn. Whatever be the reason, it is quite certain that if these common roses are grown to clear single stems—a thing as easy as anything else in rose growing—they may be used for standards, and Maiden's Blush can be got up to six feet and more by disbudding, and allowing them to run up in clear single stem. But the dog rose is too good to be condemned for the mishaps of an extraordinary winter following a sunless summer, and those who have briars cannot do better than enter buds at once, for the ground is at a high temperature and the bark rises beautifully. There is a new stock coming into use on the Continent, on which I hope to be able to report soon; but it is far better to defer that matter until I can speak with decision, and as it is not yet in the English market no one can suffer by the delay. In the choice of stocks for standards, it is obvious that a flowering rose (*cateris paribus*) is preferable to a briar, especially for hands not used to the work. If the bud misses no one need know it, for the stock will give plenty of its own bloom on its own head—if it has one—in spite of the scar where the bud was entered. In fact, a portion of its own wood may be allowed to grow to make "union standards," by entering only one bud, and the bud will take by pinching back the shoot it is entered on without taking off the naturally-formed head of the stock.

Now, as roses on their own roots generally give better flowers and more of them than worked plants, it is obvious that if we could have standards on their own roots we should secure the two advantages of good blooms elevated to the height of the eye; we should, in fact, have trees without setting up a warfare between two kinds of sap, and there always is such a

warfare in worked plants of all kinds, though, when stock and graft are well matched, it does not, as a rule, amount to anything serious or noticeable. In the case of fruit-trees, the warfare is in favour of the grower, for it increases and hastens fruitfulness; and with roses generally the union is soon completed, and stock and graft work together pretty harmoniously. But all the strong-growing hybrid perpetuals may be formed into standards by disbudding, and would endure such a trial as roses have lately had to pass through much better than heads formed on briars. There are hundreds of persons now in possession of dwarf roses raised from eyes last summer according to the instructions I then gave; and if any of our rose-growing amateurs purpose to raise standards on their own roots, that is the best method of all, because where the eye starts it swells equally from the base, forms a plump strong stem, and can be carried to any reasonable height, and then have the centre pinched out to cause the formation of a head. Of course, as they run up they must be kept quite straight by means of stakes; every side bud must be removed without injury to the leaves in the same way as growing standard chrysanthemums, and at the pinching out of the top bud or leader three side buds must be left to break and form the head. In three years roses of this kind would have fine heads and hard stems, and no one can grow standard rose-briars fit for the rosery in less time than that. Jules Margottin and Geant des Batailles would make beautiful standards on their own roots, and, indeed, any that are classed as "pillar roses" might be kept to single stems for the same purpose.

Next to eyes, plump cuttings of the new wood not quite ripe would be best. Any one can root rose-cuttings now, and the articles that appeared in the FLORAL WORLD last year will teach the process better, I believe, than anything to be found elsewhere. If for standards, the cuttings should not be topped; and as the tops are rather soft at this time of year, they must be kept close and shaded, and have frequent dewings, to prevent the top getting exhausted, while the base of the cutting forms a callus. If the cuttings are not sufficiently ripe to be put in without topping, then make them with two joints and one leaf only in this way—Cut the shoot close above a bud; this will leave on the cutting a length of wood below the lowest joint. This length of wood is not to be cut off. Remove the lowest leaf, but not the bud belonging to it. The next bud above the lowest leaf untouched, and the

leaf belonging to that bud must not be injured in the slightest; cut away the top part of the shoot above that bud; in fact, cut it down as close to the bud as possible, and then you will have a short nearly ripe shoot, with two buds and one leaf. These may be rooted in quantities in pans, or singly in small pots; and as they will root now as quick as geraniums, I prefer to insert them singly in pots to reduce the cheeks by shifting to a minimum. Fill the pots with sandy peat to the brim, and let the stuff be pressed in rather hard. Then make a hole with a wire or thin stick—nothing better than a broken rib from a steel umbrella—and insert the cutting quite to the base of the leaf. Press the stuff to it firmly, and then plunge all the pots in moist bottom-heat; nothing better than a cucumber-frame and two thicknesses of mats to be put over, and not removed night or day for a week; then to be removed at night and put on in the morning, and in another week to be left off altogether the first cloudy day. After that to be shaded only from midday sun; then to have plenty of sun and air, by which time the top buds will have started, and the pots will be full of roots. Shift to the next size, and use good loam three parts, old dung one part, and sand enough to make it light; the quantity to be determined by the texture of the loam. Give these greenhouse treatment—allow them a short rest while the dark days are darkest, and give them a start with the very first batch of plants that you set growing after Christmas, and you will begin to wish them planted out, for their tops will threaten to push through the glass or lift up the sashes. To turn them out too soon will be to their injury. Get them hardened and finally planted by the end of April, and as soon as rooted in their new soil top them, and allow them to form their heads all summer without blooming, and you will have such plants as will be the envy of people who make a great fuss about a little work. If cuttings can be had with the tops rather firm, then they may be used four or five joints long, and inserted in the open ground under hand-lights; but they must have regular attention to keep them from flagging, as if the tops get bent, it is a great chance if they ever come straight again.

There is yet another method, and that is to allow plump suckers of the season to have their way and go as high as they please, and in the autumn take them off, disbud them, and plant them out to form their

heads. Some of my self-rooted standards have been formed this way, the disbudding being the only process necessary to keep them to clear stems; and even if they throw up suckers, it is a very simple matter to remove them with a few root fibres, and make plants of them for next season's bloom.

There is one good reason for abusing standards, and that is in order to call attention to the excellence of dwarfs, for nothing can surpass the beauty of fine massive bushes of Lord Raglan, Caroline de Sansal, Jules, the General, August Mie, Duchess of Sutherland, and others of the handsome foliaged roses. The rule has been to plant standards to the exclusion of dwarfs. Now that the standards have been decimated people are beginning to acknowledge that after all they had usurped too much of the share which might have been devoted to roses in a natural state, blooming and leaving to the ground.

I cannot yet report on the roses of last year, as I have but one in bloom yet, and that is Victor Verdier, a very grand rose, in the style of Charles Duval, but a little more cupped. Céline Forestier is growing freely; Anna Alexieff has bloomed almost too profusely, and ought to have been disbudded; but the rains will help the new growth, and perhaps the second bloom will be none the worse for the profusion of the first. But looking round at the new roses, I am again reminded that the system pursued at the nurseries is not to the interest of rose amateurs. The new roses are all sent out on Boursault or Manetti stocks, and one third of all purchased may be expected to die a fortnight after planting. The public too readily encourage any method that appears cheap, and new roses at 5s. each are bought up as fast as the growers can get the little spindling stocks to take hold of the grafts put on them. You will observe that in the advertisements "dwarfs" are offered, but not a word said about their roots. Therefore if you cannot obtain roses from eyes or cuttings, make the best of the little nurslings. Plant them deep enough to place the work two inches below the surface, and as soon as you can take a cutting, off with it, and make a plant of it at once, if the original dies you will thus be safe, and may go on growing and blooming it to any extent you please. The stock of leading sorts is utterly exhausted this season, and there is therefore an additional reason why amateurs should adopt the only modes of propagating that give satisfactory results.

SHIRLEY HIBBERD.

CARTER'S PORTABLE HOT-WATER APPARATUS.

I HAVE herewith sent a rough sketch of a plant house with my portable heating apparatus therein, showing the stove in part section. I have likewise sent a sketch of the stove on a larger scale, with the diameter of pipes and water space round the fire and flue. The following description will, I think, suffice to enable the reader to understand the construction:—

A, fireplace closed in front with a regulator to ash-pit door to regulate the draught; B, flue pipe passing through the outer base, C, and conducted out of the house at any convenient part; D, water space round the fire and flue pipe; E, return pipe for circulating the water; F, small funnel or small cistern for supplying the water.

The general dimensions are as follows: Fire-box, twelve inches by sixteen inches; outside pipe, six inches diameter; inside flue pipe, three inches diameter, which leaves a space of one and a-half inch for water.

The cost will vary according to size and length of house, etc., the sketch represents a twenty feet house, with apparatus eighteen feet long. The cost of one the dimensions given will be about £5, made of strong galvanized iron.

The advantages of this arrangement is the portability with the economy of fuel and equal distribution of heat along the front of the house.

In large or extensive range of houses the pipes can be carried in any direction, as any other hot-water applications, and two or more fireplaces can be attached with the fireplace outside the building, or inside with an air pipe from without to supply air to the fire if found injurious by taking it from the inside of the house.

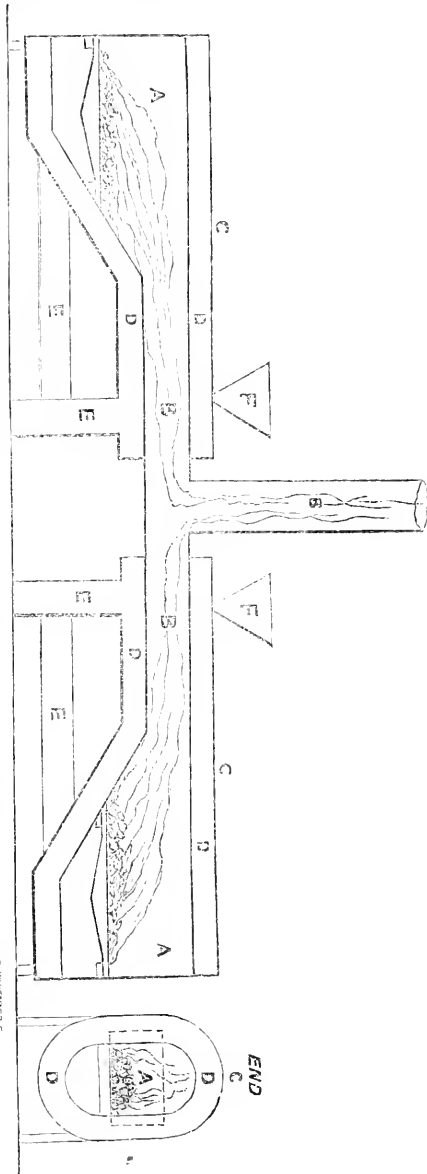
The best fuel is cinders or small coke or common charcoal (not prepared). I think if the latter was allowed to escape in the house once or twice a week, it would be found to clear the house of flies and improve the plants.

My patent steam boiler for agricultural purposes has two fireplaces, one at each end, with the flues passing twice through the boiler and returning to the centre before it makes its exit. This arrangement is not required for heating plant houses, but is very effective for generating steam for heating large establishments or drying grain, etc.

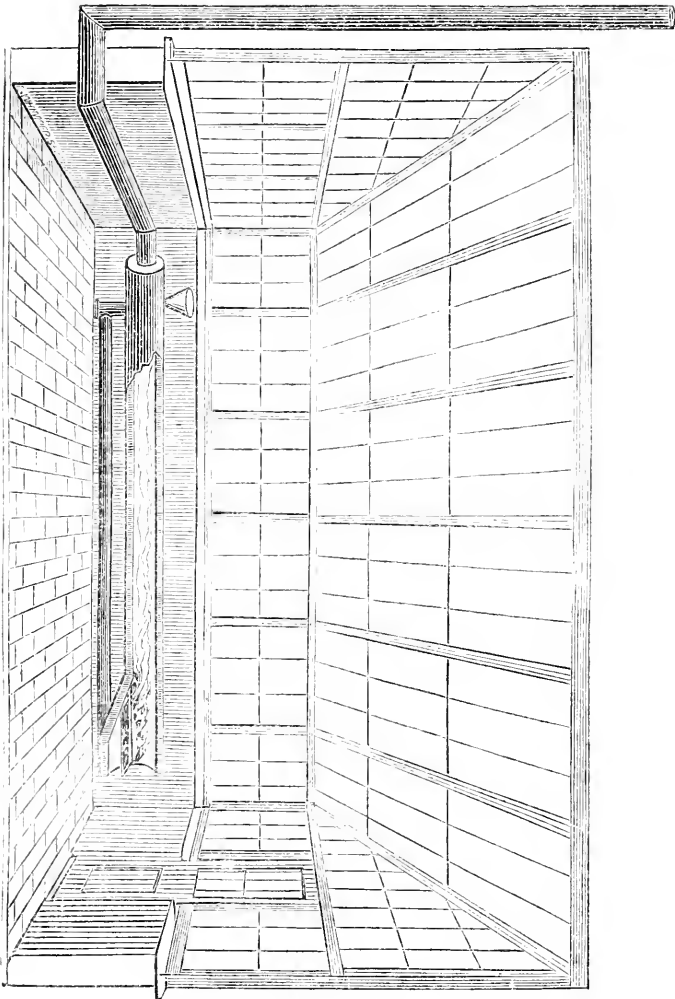
Should the readers of the FLORAL WORLD require further descriptions, I shall be most happy to supply them.

J. T. CARTER.

Peak Hill, Sydenham.



SECTIONAL VIEW OF APPARATUS.



INTERIOR OF HOUSE WITH APPARATUS IN SITU.

A NEW OCCUPATION FOR ENGLISHWOMEN.

“As to the other department of female industry to which we have adverted, it is in reality a mine of wealth which our Englishwomen have not ventured to touch. Brass buttons twisted on corkscrews will not command a high price in the market; badly cut rose leaves blossoming at their

tips into violets, or bearing acorn berries in their axils, are evidences that schools of art have not yet produced all the fruit predicted of them. The exquisite imitations of Nature which are imported into this country from France annihilate every chance of the amelioration of the lot of

those female artizans opprobriously known as 'artificial flower-makers.' Now there are thousands of women possessed of taste, and skill, and knowledge, who know not how to employ their talents—who are kept from domestic service by family traditions of imaginary independence, and who can only think of needlework and teaching as means of obtaining honest bread. What a field is there for such in this truly artistic occupation, and what a chance for them to attain not only competency but fame in carrying the art into new channels, and making the best of the old channels? If the French absorb thousands of pounds from this country yearly in the supply of artificial flowers, those thousands are at the service of native producers, on the condition that the articles are as good. Then, if carried out in the integrity of a refined refining occupation, instead of, as it is, in the style of an irksome manual labour, that stamps all engaged in it with unhappy associations, what new fields are there waiting for the introduction to them of this peculiarly interesting branch of imitative art. We will suppose a cheap method de-

vised of modelling florists' flowers, that the utmost truth is attained to, so that new varieties could be represented in models as they are now represented in flat pictures in the horticultural magazines. Why, the sale of such models would soon constitute a gigantic trade, and the integrity of such a trade could only be sustained by high intelligence, cultivated taste, and experienced skill in manipulation, and the higher the requirements of a calling, the safer and more enduring are its interests. What would Mr. Turner, of Slough, expend per year in the purchase of faithful models of single flowers of his new pelargoniums to exhibit all the year round to visitors, and send out as samples to his customers? What would Mr. Standish say if he could issue imitations of his seedling gladioli instead of ineffectual prints? Would not the Messrs. Henderson, Frazer, Paul, Tyso, Salter, Downie, and others engaged in the distribution of novelties heartily encourage such an industry as affording them a new power of vast commercial value?"—From an article on Machinery and Women's Work in *City Press* of May 18, 1861.

ABOUT CLIMBERS.

Those who take interest in natural objects, will find an abundance such as amply to repay a little close attention, for the reason that in them we perceive a wonderful adaptation of means to ends. Among those objects may be classed the means possessed by various climbers for supporting themselves above the ground. The grape-vine puts forth a forked tendril, with which it catches hold of and binds tightly round the first twig or wire that offers; and when shoot and tendril are both ripened and matured, will almost defy the strength of a man to break it. This quality is possessed with slight variations by several other climbers, as the passion-flower, the cucumber, etc. In the pea family the tendril terminates the leaf; in the clematis leaf and tendril are one and the same thing, while the tropæolum coils the leaf-stalk itself around the friendly twig. Others again bind themselves bodily round their supports, as the hop, the running bean, *Convolvulus major*, etc. Again, the ivy actually roots itself into its bearer, the fibres acting the double purpose of maintaining a firm hold and supplying nutriment to the plant. The bignonia does the same thing with this difference, that the bignonia fibres only at intervals, while those of the

ivy start the whole length of the shoot like the legs of the centipede. The bramble is furnished with stout thorns, which curve downwards, affording a safe and sure support among the forked branches of a tree; but curious to behold is the mode adopted by the Virginian creeper, of attaching itself to a wall or the bark of a tree, a forked tendril coiled spirally to render it elastic, which reduces the chances of the plant being broken, terminated by knobs, generally fine, which attach themselves as if by suction. This list might be swelled, but the object is to imply that this subject is not one of mere curiosity. Amongst climbers are comprised some of the most useful and ornamental garden subjects in cultivation; and by their mode of attaching themselves, we may learn what is most suitable to sustain them. Thus the hop climbs a pole, and beautiful it is while in blossom or seeding. The running bean climbs a stake, and the bright scarlet bloom, relieved by the dark green foliage, is highly ornamental, besides yielding a useful vegetable; the same with *Convolvulus major*, which looks well in clusters about a wide border. Peas are best supported by branching sticks, or wire hurdles, with those who are fortunate enough to possess them. The

clematis is well suited to a trellis, so also is the tropæolum and nasturtium; the honey-suckle to the wire or rustic archway; the jasmine and climbing roses to pillars, where, after attaining a certain height, if allowed to hang down without constraint, they present a graceful and truly ornamental appearance. The passion-flower will climb a wire trellis, and show off its graceful pendulous habit to advantage. Ivy, bignonias, and Virginian creepers are all adapted to climbing the side of a house, covering a wall, or the rugged bark of a tree. Grape vines being grown for the fruit more than for ornament, are usually trained to a wall out of doors, and a wire trellis in-doors.

Both are suitable, because there is a large amount of stopping and pruning to induce them to bear, and the object is to give them that position in which they get the greatest amount of heat.

Trailers differ from climbers inasmuch as they root into the ground at every joint, and are ill suited to sticks, trellis, or wall. To this class belong the vegetable marrow, which many are in the habit of training against a wall, or of laying sticks for it to run over. This ought not to be done, for if allowed to run along the ground, it will root at every joint and bear in far greater abundance.

Stanford Hill.

F. CHURCH.

RED. ROSE, AND BLUE FLOWERS.

ALL agree that these owe their colour to the same principle, becoming blue in flowers when the liquids are neutral, and red or rose colour when they are acid. This principle has been called by a number of names; Fremy and Cloez call it *cyanin*. It is an uncrystallizable solid, analogous to extractive—soluble in water and alcohol, but insoluble in ether. Alkalies give it a greenish tint. According to Morot, it contains nitrogen; but according to my investigation, cyanin becomes blue, and *not* green, under the influence of alkalies, and the green colour, which is observed on treating a red or blue flower with a salt of alkaline reaction, depends on the fact that the xanthogen, which accompanies the cyanine in almost all flowers, becomes yellow at the same time the cyanine becomes blue. The mixture of the blue and yellow constitute the green. Cyanin is also non-nitrogenous, as Morot supposed, but is identical with the substance which

Glenard calls *oenocyanin*, and which he extracts from wine. Certain red flowers do not contain xanthogen, and they become a pure blue or a beautiful violet in contact with ammonia. The poppy may be cited as an illustration. Cyanin exists in the young shoots of plants, and is sometimes accompanied with substances that are more especially found in flowers. This is the case with the young shoots of the Bengal rose, which are coloured red, are odiferous and sweet as the flowers. The sugar and rose odour disappear *pari passu* with the cyanin in the progress of the vegetation, just as is the case with the flowers themselves. Some plants with red or rose coloured flowers contain no cyanin. This is the case with the aloe, whose flowers contain a colouring substance analogous with *carthamin*, and probably identical.—*Filhol, in Journal of the Maryland College of Pharmacy.*

A PRISON MADE PLEASANT.

LEIGH HUNT, speaking of his two-years' imprisonment, says: "I papered the walls with a trellis of roses, I had the ceiling coloured with clouds and sky, the barred windows were screened with Venetian blinds, and when my bookcases were set up with their busts and flowers, and a pianoforte made its appearance, perhaps there was not a handsomer room on that side of the water. I took a pleasure, when a stranger knocked at the door, to see him come in and stare about him. The surprise

on issuing from the Borough, and passing through the avenues of the jail, was dramatic. Charles Lamb declared there was no other such room except in a fairy tale. But I had another surprise, which was a garden. There was a little yard outside, railed off from another belonging to the neighbouring yard. This yard I shut in with green pailings, adorned it with a trellis, bordered it with a thick bed of earth from a nursery, and even contrived to have a grass plot. The earth I filled with

flowers and young trees. There was an apple-tree, from which we managed to get a pudding the second year. As to my flowers, they were allowed to be perfect. A post from Derbyshire (Mr. Moore) told me he had seen no such heart's-ease. I bought the 'Parnaso Italiano' while in prison, and used often to think of a passage in it while looking at this miniature piece of horticulture :

'My little garden,
To me thout' vineyard, field, and wood, and
meadow.'

Here I wrote and read in fine weather, sometimes under an awning. In autumn my trellises were hung with scarlet runners, which added to the flowery investment. I used to shut my eyes in my arm-chair, and affect to think myself hundreds of miles off. But my triumph was in issuing forth of a morning. A wicket out of the garden led into the large one belonging to the prison. The latter was only for vegetables; but it contained a cherry-tree which I twice saw in blossom.'

SELECT PLANTS FOR MASSES.

Campanula carpatica alba.—The true white-flowered variety of this species has been until recently a rare plant in our gardens (having been generally substituted by an indifferent pale-coloured one), and though still comparatively rare, it will, ere long, take its place as one of the best white-flowered plants for the flower garden, affording an excellent contrast to its original type in the blue-flowered one. It is dwarf and compact, producing numerous white, open, bell-shaped blossoms, upwards of an inch in diameter, and blooming for a considerable period during July, August, and September. It is specially adapted for planting *en masse* in beds or parterres, and equally suitable for a heavy edging to borders or beds of evergreen shrubs. It is the most readily multiplied by division from the roots, being otherwise slow of increase by cuttings. This species, in common with many others allied, secretes a viscid milk-like fluid, from which I infer that its culture in pots or vases will require a porous material, of which loam should predominate, with one-third dry fermented manure, or dry unfermented leaf-mould, with a sixth part of pounded brick, potsherds, or similar material.

Calandrinia umbellata.—One of the most brilliant little plants ever introduced, of a compact, decumbent habit, with a grayish-furred aspect, and, in the absence of the last feature, would readily be taken for a linear-leaved species of thrift. Though its ordinary extent of growth rarely exceeds

a span, it is richly adorned with terminal clusters of violet-erimson, salver-shaped blossoms, upwards of an inch in diameter; and whilst it is equal to the finest kinds of portulacas in beauty, it possesses beyond them a feature essential to every good plant, being perennial in its duration.

Nothing can surpass its effect, *en masse*, in a small parterre, or for single effect upon rock-work, or a partially-raised mound upon ordinary borders. Wherever plants are esteemed as "Nature's jewels," this should always be found within the casket.

Anagallis cœrulea compacta.—This is the most valuable blue-flowered variety, and is known in the nursery collections as *A. grandiflora cœrulea* and *A. grandiflora compacta*. In growth it is nearly a counterpart of the original small narrow-leaved *A. grandiflora*, but in the present kind assuming a darker green aspect, more dense and compact in its habit, and much more profuse in its bloom, which is of a rich ultra-marine blue. It possesses none of the excessive vigour of the stronger varieties. For bedding it is an invaluable kind, and under skilful management, by accumulating and duly restricting its growth previous to its summer bloom, would form a beautiful edging for marginal effect. It is also a very ornamental object by its diversified effect on limestone rock-work, and forms a lovely contrast for portable specimens in pots or vases, in company with the fine white variety of *Lobelia erinus compacta*.

W. W.

WRINKLES.—Trees may be pruned at any time, without danger, by simply covering the cut parts with shellac varnish.—Chemical researches by Mr. J. Salisbury, of Albany, show that good varieties of the apple are richer in those substances which

strictly go to nourish the system than potatoes are; or, in other words, to form muscle, brain, nerve; and in short, to assist in sustaining and building up the organic part of all the tissues of the animal body.—*Chemist and Druggist*.

GARDEN AND GREENHOUSE WORK FOR JULY.

ANNUALS sown now will flower beautifully during September and October. This is the best time of year to sow *Nemophilas* in shady places; the bloom is much finer and more lasting than of those sown in the usual way in spring.

AURICULA seed to be sown as soon as ripe, and the old plants to be potted.

AZALEAS may be propagated from cuttings of the young wood, planted in silver sand under hand-lights.

CARNATIONS to be layered and piped. Seedlings to be transplanted six inches apart.

CHRYSANTHEMUMS to be stopped for the last time, keep the plants clean, never neglect the training, give plenty of water, and shade from the midday sun those intended for specimens.

DAHLIAS, to bloom in the conservatory

in pots late in the season, should now be propagated by cuttings. We grew some standards last year by taking up straight stems, disbudbed, and they were very attractive, though rather lumpy headed.

PROPAGATE in the open ground geraniums, herbaceous plants, and hardy shrubs from cuttings of this season's growth.

STRAWBERRIES for pot culture should be potted at once into six inch pots, filled with a rather firm and rich compost quite to the rim, and rammed in hard before the plants are inserted. Stout runners of the season make the best plants, and if they are only just forming their roots will do as well as those that are plentifully furnished. Put them into a pit or frame and shade for a week, and then give good culture to promote the formation of roots and the ripening of the crown.

TO CORRESPONDENTS.

WILD FLOWERS.—We have received from the Society for Promoting Christian Knowledge, parts 1 and 2 of "The Flowering Plants of Great Britain," a handsome octavo work now in course of publication. We cannot speak too highly in praise of the coloured plates, and the descriptions which accompany them. Accuracy, and beauty of delineation, the grouping of species on a most judicious plan, and the adoption of the natural system as the basis of popular descriptions, are recommendations which we have no doubt will have great force with our readers. This is certainly the best and cheapest reliable work on wild flowers in course of publication.

THE FINEST SPAR IN ENGLAND is the flag-staff lately erected in Kew Gardens. It is a specimen of the Douglas Pine, and is twice as high as the highest trees that surround it. Its total length is 157 feet; cubical contents, 160 feet; total weight complete, 4 tons 8 cwt. 2 qrs. It is fixed in a brick well, and 11 feet 6 inches are sunk below the level of the ground. The age of the tree which supplied the spar was about 200 years, and its total height 220 feet. For this handsome and appropriate gift to the royal gardens, the public are indebted to Mr. Stamp, of Rothenthie.—*Recreative Science.*

NAMES OF PLANTS AND NOTES ABOUT THEM.—A. B.—Your shrub is *Corchorus Japonicus*, now called *Kerria Japonica*, in praise of which it would be scarcely possible to say too much. The yellow flower is *Trolius Europeus*, a hardy British plant, which grows and blooms abundantly in the damp meadows about the New Forest, where we have seen it produce effects that could not be equalled in any flower-garden. The shrub you sent was *Cotoneaster mycophylla*. There is as much difference between it and *Candleberry myrtle* as between a magnolia and a gooseberry.—W. S.—The little scrap sent we cannot name; it is probably a veronica. All veronicas require to be liberally grown and well supplied with water. V. Andersoni, Lindleyana, speciosa, and others of like habit, do first-rate in the open border, and

in mild winters take no harm. Old plants should be shortened in every spring, and encouraged to grow; and they will flower well through September, October, and November, and be useful to group with chrysanthemums.

—*Brentingby Cottage.*—The flowering specimen is doubtless a pentstemon, but we cannot make it out as to species. We should like a live plant if that be possible, as it appears to be an interesting thing.—The New Zealand seed is evidently some papilionaceous plant, order Leguminosae, tribe Hedysaræ.—*Sub. Enniscorthy.*—Yours is a beautiful herbaceous plant, now not much known. It is *Monsonia speciosa*, figured in Loddige's "Botanical Cabinet," No. 858. It is a Cape plant of easy culture. "Melodiar" is a name we do not understand.—W. P.—Specimen in blue-ribbon *Sagina procumbens*, white-ribbon *Spergula pilifera*, green-ribbon *Spergula saginoides*. Cut out from the turf all the tufts of *Sagina procumbens*, and plant them together to make a separate turf; the two *Spergulas* allow to remain together, the difference between them is very slight, and you are rather fortunate in obtaining both species from the same packet of seeds. *Sagina procumbens* is one of the commonest British weeds.—E. B.—

1. *Clematis azurea grandiflora*, prune it close back in spring, when just about to break.
2. *Jasminum revolutum*, young side-shoots will strike now under bell-glasses or hand-lights. As soon as your plant fills its pot with roots, shift it into a larger one; do not prune it all, except to regulate the growth, and it will bloom next year if assisted now with warmth and moisture, and the wood well ripened in the autumn.
3. *Daphne odora*, grow in turfy peat, with a liberal admixture of sand, plenty of water while growing, at other times to be kept only moderately moist. The cool greenhouse is the best place for it.
4. We cannot name from part of a leaflet. It is an acacia. You had better not cut it down; make a standard of it, and let it grow as it likes till it flowers, and if it proves to be good propagate it from firm side-shoots.
5. *Cotoneaster mycophylla*.

6. The agapanthus can hardly have too much water while growing and blooming; it will flower beautifully in the open air. Azaleas should be propagated from young shoots, dibbled into silver-sand, and covered with bell-glasses. Common spruce will suit your triangular piece, unless you would prefer (as we would) a selection of hardy conifers. Remove the ivy at once from the stems of the Portugal laurels. August is the best month for cuttings of common laurel.—*R. G.*—The rose with a monstrous centre is not an uncommon thing. Good culture is the only preventive.—*J. R.*—*Festuca ovina*, see FLORAL WORLD, Vol. I. p. 62. Your request cannot be complied with.

TROPEOLUMS.—*No signature.*—You do not say what kinds of *tropeolum* you refer to. If the bulbous kinds, pot them early in spring and plunge in a hot-bed till they break; then give good greenhouse culture. *Cinerarias* and *calceolarias* have been treated again and again in former volumes; we cannot now make room for a full reply to your general question.

SEA SAND.—*A. B. S.*—Sea-kale and asparagus will derive most benefit from it among kitchen crops, and hardy spring flowering bulbs among flowers. In a heavy soil it may be used to every kind of plant, in a light soil very little or not at all.

LEEDS EXHIBITION.—The schedule of the tenth grand horticultural *fête* came to hand too late for notice in the usual place. The dates fixed are July 16, 17, and 18; the prizes amount to 400*l.*, in addition special prizes are offered for amateurs and cottagers. We trust the floricultural public of Leeds and vicinity will liberally support this spirited undertaking.

CATALOGUES RECEIVED.—"List of Select Plants cultivated and sold by F. & A. Smith, Park Road, Dulwich." A good catalogue of greenhouse, hedging, and exhibition plants. We know Messrs. Smith's stock to be extensive and various, and the list proves that it is selected rather for general usefulness than to suit the whims of merely occasional purchasers of varieties. It includes some new azaleas, clematis, and fuchsias.

ROSES WINTERED AT EAST SHREVE.—Will you record in your next number that I saved through last winter, fully exposed, some having a few fern sprays about them however, tender roses, standards and dwarf, now blooming: *Vicomtesse de Cazes* (st.), *Elise Sauvage* (st.), *Isabella Grey*, *Princesse Marie*, *Madame Willermoz*, *Narcisse* (st.), *Le Pactole*, *Ophiré* (st.), *Jean D'Arc* (st.), *Saffrano* (st.), *Souvenir d'un Ami* (st.), *Jeanne Desprez*, and almost all *Bourbons*.—*C. E.*

TIFFANY HOUSES.—**CANKERED FRUIT TREES.**—*C. E., East Sheen.*—You may proceed to the erection of a tiffany house with perfect confidence, and the larger you make it the more secure will it be against frost. Roses, azaleas, canellias, and all nearly hardy fruit trees, such as the choicer kinds of pears, peaches, &c., do admirably in these houses, but they are quite unfit for soft wooded greenhouse plants during winter. We advise you to build the house in a substantial manner, in order that it may be proof against storms, and to use the stoniest make of Shaw's tiffany. Your soil is evidently not adapted for strong growing apples and pears, and as you are situated on a "pan" in which the water collects, you would do better to plant them on mounds. As clay is plentiful near you, it would be well to cart in a supply to chop over with your hot stony soil, which is too poor for such sorts as Cox's Orange, Norfolk Beefing, and Ribston Pippin. We would use at least half clay in every station where a tree was planted. We have quite recovered some very

decrepit trees that stood in a pan, and were literally rotting away through the wetness of the subsoil. There was no outlet for the water, and the first season we cut deep trenches to draw the water away from the trees, and then sunk three deep wells to take the water from the drain pipes. Cannot you help your trees in a similar manner? Bush trees to be lifted every other year will pay you far better than standards, and you can give them a little fresh soil at each lifting. The following will suit your soil:—12 *Good Apples*: Ashmead's Kernel, Red Astrachan, Cox's Pomona, Court pendu Plat, Golden Pippin, Lord Sulfield, Sturmer Pippin, Baddow Pippin, Large Yellow Bough, Margil, Forge. We advise them to be all bushes or pyramids on Paradise stocks, and to be lifted annually or biennially, according to the growth they make. 12 *Good Pears*: Prince Albert, Urbaniste, Yat, Passe Colmar, Winter Nelis, Louise Bonne de Jersey, Josephine de Malines, Jargonelle, Doyenné d'Été, Forelle, Beurré Diel, Bon Chrétien. These to be pyramids or bushes on quince stocks.

HEMEA ELEGANS.—*A. B.*—This is a biennial to be raised from seed sown from April to June, and grown quick in a mixture of rotten dung and peaty loam. Next spring to be turned out into a rich bed or border and well supplied with water. The grub is the larva of the common May bug, of no harm whatever in the garden. The grubs that are commonly met with in dung are generally more useful than hurtful to the gardener.

CLIANTHUS DAMPIERI.—*W. E. D., Stony Stratford.*—This should be kept growing freely, any check is hurtful to it, and likely to produce red spider. It will be a heavy job to turn them out of pots larger than those they are in already (six to the cast). You may overcome that difficulty by sinking the pots into the holes which the plants are to occupy, and then breaking the pots away. They will remain very well over winter in the pots as they are, and to keep them going give plenty of water, and once a week a spoonful of Peruvian guano to each spread over the surface of the soil in the pot, and washed in with ordinary watering. One might be tried out of doors in a warm place. The finest plant of *C. puniceus* we ever saw was one we had against a south wall all winter, with bundles of sticks set against it in frosty weather. But the winter was a mild one. We fully believe *Dampieri* is as hardy as the elder kind, as it comes from a climate that bears some resemblance to our own.

TOWN GARDEN PLAN.—*C.*—The idea of raised terraces is good. If carried out you would require twelve trees, four on each elevation. Nothing would look better, or do better than *Juniperus Phœnicia*, *Juniperus sinensis*, or *Juniperus Virginiana* var. *erecta*. They are massive yet graceful. All the trees employed in this part of the work must be of one sort. Chinese arbor-vita or Irish yew would be a trifle cheaper, and accord with the plan, but we recommend either of the first named. Birch would be most desirable for the bottom line. As to clipping, almost any tree will submit to it if properly done, even spruce will make a good clipped hedge. You had better not use edging box for the surfacing under the trees; nothing better than Savin, and *Juniperus tamariscifolia*, which is unequalled for closeness and beauty.

PLANT HOUSE.—*Poor Gentleman.*—Nothing can be better than a flue for your purpose. Hot water is unquestionably preferable but will be too expensive. It would be hard to devise for you a better scheme than that figured and described in the FLORAL WORLD, Vol. II., p. 9; see also p. 104 of the same volume.

THE
FLORAL WORLD
AND
GARDEN GUIDE.

AUGUST, 1861.



TWO EXHIBITIONS OF ROSES within a few days of each other is the agreeable result of the effort first made by the National Association, which has handed over its chosen task to the Royal Horticultural Society. It is quite true that most of the exhibitors who contributed to the Crystal Palace Show made their appearance in much the same manner at Kensington Gore, and in a few cases the very same flowers were shown. But the tables were turned in several instances, and those who were first in one instance were second or third in the other. In visiting these exhibitions we had in our mind that, on the break-up of the winter, noisettes, teas, and hybrid perpetuals were scarcely to be had for love or money; that such roses as had survived the winter were making as free a bloom as ever, though the blooms were rather thinner and more open than usual; that most of the old summer roses had escaped the winter unhurt, and that a certain number of the new roses were to be looked for in competition with the very best of the established varieties. Respecting the new roses, the most sanguine lover of novelties could not have been disappointed. They were brought to their stands in plenty, and a certain number proved equal to the most renowned in our best lists, and a few in some respects superior. But instead of summer roses making a more than usual figure, the principal triumphs were accomplished by means of teas and hybrid perpetuals, and these two classes are evidently acquiring chief authority in the court of the Queen of Flowers. The show at Kensington was unquestionably the best as to the merit of the stands; the amateurs were in the ascendant at Sydenham, and the nurserymen took the lead at the show of the Horticultural Society.

As usual, the most plentifully exhibited of all the roses was that free grower, free bloomer, and wonder of colour, General Jacqueminot. The General has some formidable rivals, and if we except Geant des Batailles, which is utterly eclipsed by it, we have as first-rate varieties in the same class—Prince Leon, an exquisitely-formed high-coloured rose; Senateur Vaisse, a rare grower on its own roots, but being unfairly dealt with in

the wretched mode of propagation adopted by the nurserymen; Oriflamme de St. Louis, vivid and substantially made; Charles Caprelet, with less of purple in the petals than any of the class; Duchess of Norfolk, now considerably finer than when first introduced to the company of show roses, as the result of a good cultivation; Paul Ricaut, a rose of short endurance, but, while it lasts, almost a match to Prince Leon.

In the section of darkest roses, excluding the trashy purples and indescribable mixtures of slate and chocolate, the best, all things considered, is certainly Lord Raglan. It is a fine centre, it holds its colour tenaciously, is an extraordinary grower, whether on its own roots or any free stock, and has a foliage to which there is no parallel among roses of the hybrid perpetual section; though the General and Jules Margottin are beautifully clothed. Prince Noir has been our best dark rose for many years, but it must have a second place now that the class has been enlarged, and better growers have in some measure superseded it. Prince Noir is neither a good grower nor a free bloomer, though when just opening it is rich beyond description, after which it becomes loose, and fails before the show is over. Cardinal Patrizzi, a moderate grower of rather robust habit, stands almost alone in the richness of its deep velvety petals, which are of the same make as the petals of the General, though on a reduced scale in proportion to the smaller size of the flower. This holds its place as a first-class rose among the dark varieties. Princess Mathilde is another dark rose of fine character, there is a shade of bronze mixed with the purple, the substance is good, but the flower is scarcely full enough. Mr. Standish's Eugene Appert takes its place in this class as one of the very best, and had it been sent out on its own roots instead of on Boursault and Manetti stocks, it would by this time have acquired a fame little less than that enjoyed by the General, for it has every good quality of foliage, habit, and bloom, and when at its best is rich and glowing, and of such good substance that the heat and dust of a day's exhibition cast but a faint cloud upon its beauty. Francis Arago, Emperor de Maroe, Victor Trouillard, and Louis XIV. make up the full list of those we consider indispensable among the roses of deep colour. The last is new, and we have watched it attentively, and are satisfied, by its behaviour in our own collection, that it is destined to play an important part in future contests.

The best shaped, fullest, freest, and most compact of all roses are those which approach nearest to true rose colour. Take, for example, the common cabbage rose, and, *in its way*, it would be difficult to beat it; make one step farther, and when Anna Alexieff is well done, it is one of the very best of roses for almost any purpose. It occupies a leading place in our own rosery, through the necessity of its merit as a grower, an abundant bloomer, and when disbudded is as large and better built than Souvenir de la Reine d'Angleterre, or Colonel de Rougement, both of them popular for their size, and both of them coarse in character. William Griffiths in this class of colour holds his place unharmed; and so, also, does the strong-growing Jules Margottin, which will make almost as many blooms as leaves if not disbudded, but, alas! goes out of bloom for near six weeks after the first effort. Francois Premier, Lord Palmerston, Victor Verdier, Alexandrine Bachmeteff, Baronne Hallez, Marechal de la Brunerie, Comtesse de Chabillant, Madame Jacquin, Madame Place, Baronne Prevost, General Simpson, Alphonse Karr, and Anna de Diesbach

are the remaining *best* roses of the rose section, as we noted them off at the two exhibitions, and keeping in mind, at the same time, their several characteristics as denizens of the rose garden.

The lightest roses include, also, some of exquisite beauty, and the best for general purposes is our old friend Madame Vidot, a strong grower under all circumstances, and one that holds its abundant blooms as firmly as if no extremes of weather could affect them. Caroline de Sansal is an old favourite, but a shy bloomer. Madame Rivers and Madam Standish are dividing attention, and it is hard to say at present which is the best; but both are good, and should be entered in the select list. Naomi, a very cheerful flower, Duchess of Orleans, and Lady Stuart were the only other roses of this class of colour which we noted as indispensable to a good collection. The best whites were Dr. Henon, Madame Plantier, Acidalie, Virginal, and Souvenir de Malmaison. The old White Globe, the joy of our grandfathers, is utterly eclipsed, and White Moss is going out of cultivation, along with the rest of the summer roses.

New roses have been more liberally exhibited this season than on any previous occasions, and during the last three years there have been a greater number of really good roses introduced than during the ten years preceding. At the Crystal Palace, Mr. Standish took first prize for new roses, and Messrs. Frazer were second. At Kensington, Messrs. Frazer and Mr. Cant were equal first, Mr. Standish second, Mr. Keynes third. Mr. Keynes was the only exhibitor of Celine Forestier, and his blooms of it at the Crystal Palace were charming enough to make us wish to see it again. Our own plants of it are making strong shoots, but have not yet bloomed. It is a true yellow, and as well formed as any of its class. Gloire de Santhenay we pronounced on its first appearance as a formidable rival to the General, and at these two exhibitions it has confirmed our opinion that it will prove the best of all the new roses of the past three years. Next to that we must place Eugene Appert, and then Louis XIV. must follow. After this the choice must lie variously between the following, all of which are of first-rate excellence, and a few will, no doubt, supersede older varieties of similar colour: Mrs. Mitchell (Mitchell, Piltown), rosy pink, large, substantial, but far from perfect in outline; Prairie de Terre Noire, dark purple, well built, one of Mitchell's 96; Reynold's Hole (Standish), lively pink; Marguerite Appert (Standish), blush white, rather flat; Madame Standish, in the way of Madame Rivers, but a stouter flower and grander proportions; Triomphe d'Amiens, crimson mottled and shaded with maroon; André Desportes, Madame Furtado, like Baronne Prevost, and we doubt if anything better; John Standish (Standish), a highly coloured rose, better than Geant des Batailles; Grégoire Bourdillon (Standish), deep rich rose; Comte de Falloux, bright red, large; Reine des Violettes, good as shown, but yet to be tested as to growth and character; Abdel Kader (Frazer), a rich dark flower; General Washington, Madame Villot; Victor Verdier, light rose, large and full; La Boule d'Or (Mr. Cant), a charming new tea; Mademoiselle Bonnaire. To be able to specify so many out of about two hundred and fifty new roses that have lately acquired places in the lists, is a proof that the rose is advancing, as it is also an indication that still greater triumphs await the sedulous cultivator of seedlings, for whose efforts there will be no lack of encouragement, now that we have such ample means of putting to the test of a severe comparison the results of persevering patience and skill.

NOTES OF THE MONTH.

GARDENERS' ROYAL BENEVOLENT SOCIETY, June 26.—The anniversary festival of this admirable society was held at the London Tavern, and the number of persons present was larger than on any previous anniversary. The upper end of the room was adorned with a magnificent stage of flowers, forming a bank: they consisted chiefly of pelargoniums liberally furnished by Mr. Charles Turner, and their beauty was greatly enhanced by the intermingling of masses of *Delphinium formosum* with the crimson, scarlet, and white of the other flowers. Among the company present were Sir Arthur Buller, M.P., E. M. Ward, Esq., R.A., Mr. Benjamin Webster, J. E. C. Koch, Esq., General Ramsay, Captain Lees, Mr. A. Chapman, Mr. Wrench, the treasurer, Messrs. Lee, Turner, Cutbush, Hibberd, Gray, etc. The chair was occupied by the Rev. S. M. Bellew. After the usual loyal toasts, the reverend chairman proposed "Success to the Gardeners' Royal Benevolent Society," after which subscriptions to the amount of £300 were announced.

ROYAL BOTANIC, July 3.—This was the society's last show of the present season, and it was an unusually interesting one. Stove and greenhouse plants were generally good, and included several novelties. Roses, pelargoniums, and foliage plants—finer than at any previous exhibition this year, and among miscellaneous subjects good culture made amends in most cases for lack of novelty—and some old plants appeared in a condition to prove that time and competition had not diminished their excellence. Mr. May, gardener to J. Spode, Esq., was first in the class for sixteen stove and greenhouse plants. He had *Pleroma elegans* loaded with purple blooms, *Azalea Gledstanesi*, *Rhynchospermum jasminoides*, a neat greenhouse climber, with small white flowers, emitting a delicious perfume, one of the best plants of the kind for amateurs. Mr. Peed, in the same class, had *Roella ciliata*, blossoms pale blue, a white-flowered *Ixora*, admirably managed; and that interesting plant *Rondeletia speciosa*. Mr. Baxendine had a fine *Hoya bella*, *Stephanotis floribunda*, well bloomed; *Clerodendron splendens* and *Rhynchospermum jasminoides*. Mr. Green, gardener to Sir E. Antrobus, was first in the class for ten stove and greenhouse plants, but his sorts were much the same as the sixteens, except that he had *Kalosanthes*, *Hederomas*, and a *Statice*. Good culture rather than novelty were the distinguishing characteristics of this class. Messrs. Frazer, Cutbush, Rhodes, Page, Tegg, and Kaile also exhibited in the same section. The collections of fine foliage plants were the subjects of general admiration, and were contributed chiefly by Messrs. Cutbush, Henderson, Jackson, Lee, and Williams. *Caladium Chantini* was the best *caladium* there, as it is, doubtless, the best in cultivation. *Farfugium grande* was shown in very grand proportions; *Alocasia metallica* is coming into high favour as one of the grandest foliage plants of our stoves; *Begonias* were shown in abundance, with crotons, palms, marantas, and other established subjects. Mr. Stone, gardener to J. Day, Esq., of Tottenham, was deservedly first in orchids; his *Lælia purpurata*, *Cattleya Wagneri*, and *Anguloa Clowsei* were satisfactory evidences of his skill and judgment in the management of this interesting tribe of plants. Mr. Milford, gardener to J. McMorland, Esq., was second with some fine dendrobiums, *Lælia purpurata*, and *Epidendrum vitellinum*. The orchids from Messrs. Baker, Bunney, Woolley, Green, and Chilman, were too good to be dismissed, as we must dismiss them, with the mere mention of the cultivators' names. Roses were contributed by Mr. Turner, Mr. Mitchell, Messrs. Paul, Miss Crayshaw, C. A. Hanbury, Esq., Mr. Standish, and Mr. Francis. Gloire de Dijon and Auguste Mie were better shown than at either of the subsequent rose shows. Messrs. Paul had Louis XIV. in fine condition, and in Mr. Mitchell's lot *Senateur Vaisse* looked charming. Mr. Turner was, as usual, first for pelargoniums. Among his best were Prince of

Prussia, G. Severyns, Bianca, Queen of Scarlets, Desdemona, Leviathan, Viola, Ariel, Lucifer, Prince of Wales, Bacchus, and Empress Eugénie. Messrs. Fraser were second. Among them were Excelsior, Governor-General, Duke of Cambridge, Sanspareil, The Bride, Mazeppa, and Meteora. Messrs. Dobson sent Lucifer, Bacchus, Fancy, Scaramouch, King of Scarlets, Leviathan, Madame Hortado, Viola, Fairest of the Fair, Flora, Evelyn, and Monarch. In groups of six new kinds, Mr. Turner showed Lord Clyde, Transcendent, Sunset, Lady Taunton, Glowworm, and Rembrandt. His six large plants were Viola, Governor-General, Sanspareil, Fairest of the Fair, Mr. Hoyle, and Saracen. In fancy kinds, the last-named exhibitor was also first with Musjid, Claudianum, King of the Fancies, Captivation, Zoc, and Beauty. In the Amateurs' Class the best selection was shown by Mr. Shrimpton, who sent Acme, Delicatum, Electra, Princess Royal, Claudianum, and Cloth of Silver. Messrs. Bailey and Hollingsworth also contributed well-grown collections. Of ordinary varieties (amateurs), the best came from E. Foster, Esq., Clewer Manor, near Windsor; the sorts were Glowworm, Bijou, Perdita, Bacchus, Lord Clyde, and Autocrat. The same exhibitor also furnished a collection of ten plants in fine condition; the sorts were Lord Clyde, Desdemona, Flora, Bianca, Prince of Wales, Leviathan, Viola, Lightning, and Ariel. Of seedling pelargoniums, Mr. Nye, gardener to E. Foster, Esq., sent some remarkably fine things, among which were Conflagration, crimson scarlet with deep black spot on the upper petals, fine in quality and shape; Kettledrum and Middle Patti, both highly promising rose-coloured sorts of different shades with clear throat; also Lord Chancellor and Eldine, both excellent dark kinds. Leander and Butterfly, from Worton Cottage, were captivating kinds, also Regina formosa, Emma, Sylph, Fidelea, and Maiden Fair; the last is a promising white variety. Rosy Gem, a richly coloured sort, was shown by Mr. Bull, and we noticed one or two good additions to the variegated class, especially two kinds called Sunshine and Sunset. Among the new plants there were two attractive Anætoehilus from Mr. Bull, Libocedrus tetragona, one of the most valuable of recently introduced conifers, from Mr. Veitch; also from the same Mimulus cupreus which promises to be a useful bedder. Messrs. E. G. Henderson sent a charming double petunia called elegans, and a new chamæcyparis. Cupressus Lawsoniana, with golden variegation, from Mr. J. Waterer, attracted the admiration of collectors of ornamental trees. Last, but not least, we must not omit the mention of an old friend with a new face in the shape of an improved seedling variety of Campanula rotundifolia alba, from Mr. Chitty of Stamford Hill. The set of three plants loaded with large snowy bells, each forming a perfect pyramid, had a charming appearance. One of them measured 30 inches high, and 46 inches in circumference. This new campanula must be ranked among the most chaste and beautiful of all the hardy herbaceous plants in cultivation, and it is certainly quite distinct, in the size of its blooms and fine habit, from the older form out of which it has originated.

CRYSTAL PALACE ROSE SHOW, July 6.—The fears entertained that the rose show at the Crystal Palace would prove a failure were not altogether groundless, but we are happy to have to record that they were not wholly realized. There never were so many ill-shaped and falsely coloured flowers on an exhibition table; but at the same time good roses were plentiful, and many varieties were shown in the best possible condition. Mr. Mitchell, of Piltown, carried off the first prize for ninety-six, Mr. Keynes second; Mr. W. Paul, Waltham Cross, third; Messrs. Paul, Cheshunt, fourth; Mr. Hollamby, fifth. In the forty-eights, Mr. Cranston of Hereford was first; Mr. Keynes, second; Mr. E. Tilley, third; Mr. E. Hollamby, fourth; Mr. Cant, fifth. The other nurserymen's prizes were divided between Messrs. Keynes, Cranston, Laing, Cattell, Shenton, Fraser, and Mitchell. In the amateurs class for thirty-six, Mr. Hedge of Colchester, was first; Mr. Keel, second;

Mr. Hollingworth, third. The principal winners in other classes were Messrs. Dennis, Corp. Thurland, Moffatt, Mercer, Walker, Evans, Cooper, Moore, Treen, etc.

ROYAL HORTICULTURAL SOCIETY'S ROSE SHOW, July 10.—In points of interest this was a better show than that at the Crystal Palace. The flowers were better: there were fewer absolutely bad, and a greater abundance of absolutely good ones. In the nurserymen's classes, the following were the positions in the order of the names—ninety-six, Mr. Mitchell, Mr. Keynes, Mr. Hollamby, Messrs. Paul and Son, Mr. W. Paul, extra; forty-eight, Mr. Cranston, Mr. Cant, Mr. Keynes, Mr. Laing, extra, Messrs. Francis, Hollamby, Paul, Turner. The twenty-four's were divided between the same with the addition of Messrs. Fraser, and Cattell. The amateurs' classes were ably contested, Mr. Hedge was first for forty-eight; Mr. W. Corp, first for twenty-four; Rev. W. F. Radclyffe, first in eighteens; Mr. Hedge first in twelves. In the open class for fifty roses, twelve varieties in eight inch pots, Mr. Turner was second (no first awarded.) For twelve new roses of 1860-61 (open), Messrs. Fraser and Cant were equal, first; Mr. Standish, second; Mr. Keynes, third. The collection of moss roses for which Messrs. Paul and Son had first prize was a most beautiful exhibition. We will give next month a list of the best roses selected from both exhibitions.

ROSES IN THE LONDON SUBURBS.

AMATEUR gardeners are under great obligations to you for your labours for their instruction and encouragement, particularly in relation to the culture of the rose. Many a little suburban plot now exhibits the charms of the queen of flowers, which, but for your writings, would have been a despair to its possessor, who, like myself, looks forward with the pleasure of an enthusiast to your monthly notes respecting his favourite. I do not know whether the remarks that follow may be deemed of sufficient interest for your FLORAL WORLD; they are, however, the result of practical experience, and may serve as hints to other suburban amateurs, situated as I am. I have but a small piece of ground, forty feet by twenty feet, in the neighbourhood of Victoria Park; aspect north, very open, and the sun upon the greater part of it all day. Instead of being separated from the adjoining premises by a wall, it is surrounded by *open palings*, and to this, in some measure, I attribute my success in rose growing. I have paid particular attention to *sorts*, since I became acquainted with your works, and find my account in it. I have about eighty or ninety plants on the briar, Manetti, and their own roots. I find the Manetti to do the best, both for growth and bloom; nevertheless all do well. My soil is light, over gravel, but I have dressed with loam where the roses are planted, and I give them a weekly, and weakly, dose of guano water, Peruvian or Cuero. I always plant roses in puddle,

and when I move them from pots I put a large flower-pot over them for some days, particularly in hot weather, and remove it by degrees. By this plan I never find them flag, or even appear to check. I also water freely, and syringe overhead. I mulched with long manure in the spring, and thereby (note this) nearly cleared my ground from "wire-worm" and "mangy many feet." The vermin, attracted by the moist warmth, I suppose, buried themselves in the manure, which I removed, and destroyed them wholesale. From experience, I would say to all small amateurs, be content with sixteen or eighteen sorts, and have repeats. I will now give you my experience with the various kinds, some of which are not in your list.

1st. G. de Dijon (T.), H. P.'s Jules Margottin, Sr. de Leveson Gower, M. Vidot, Anna Alexieff, M. Domage, Sr. de la Reine d'Angleterre, and L. Odier, have been first-rate; also B. Sr. de la Mahnaison and Sir J. Paxton.

2nd. H. P.'s William Griffiths (has grown immensely, shoots two feet long, since the spring, and as thick as a walking cane), this is on the Manetti; B. Prevost, G. des Batailles, Alex. Bachmeteff, General Simpson (an excellent rose), have done well.

3rd. Cardinal Patrizzi has not pleased me, either on the briar or own roots; General Jacqueminot has not yet done much, either worked or on own roots; J. Lafitte, fair; Dr. Marx has disappointed

me; M. Campbell grows strongly and has given a few good blooms; B. Apolline, fairly, a large standard, but sadly cut about the last frost; Ardoisè de Lyon at present very badly. I must not omit H. P. Prince Leon, which is excellent; Mrs. Bosanquet is also good, but does not stand the winter out of doors.

I have some few teas. *Devoniensis* does well; the others are growing freely. I have not their names, but must try to discover them. One is a rich cream colour, the edge of every petal deeply margined with a colour like a red currant stain. N. Ophiric has not yet bloomed, but grows freely. From a neighbour's garden I am enabled to state H. P. M. de Montigny is first rate, and also Bourbon Queen. My *Triomphe des Beaux Arts*, own roots, promises to be a good suburban rose. H. P. L'Enfant du Mont Carmel is not good; a fine rose, it does not open freely,

but splits. M. de Trotter is a good rose, but too small. I obtained some of my best plants from Messrs Fraser, Lea Bridge Road, who have a clever rose grower, and from Mr. J. Fry, of Homerton, whose large fuchsias, by the way, are well worthy of inspection. I mention these two names, that amateurs in our neighbourhood may know where they can make sure of being well served, I myself, in my days of inexperience, having been taken in and done for by professedly respectable dealers.

That I have had several blooms, four and a half to five inches across, some of which were fit to show, to the admiration of my friends and gratification of myself, must be attributed to the FLORAL WORLD, and kindred works. Accordingly I must beg you to believe me your sincere well-wisher and obedient servant, PRIOR.

Homerton, July 15, 1861.

CULTURE OF THE OLEANDER.

NERIUM OLEANDER is a very old greenhouse favourite, one of the best in cultivation, but, judging from my own experience, one that is much neglected. We seldom or never see it at horticultural shows, nor hear of one of the great gurus in floriculture taking it under his especial care and protection, and why not? If any greenhouse shrub will reward the cultivator with handsome foliage and beautiful flowers, *Nerium oleander* will do so. I have never been on the Continent, but a gentleman who has tells me, not that they manage this plant better in France, but that there it receives that consideration to which its extreme beauty entitles it, and that it grows and blows there in a manner truly gratifying, and why it cannot be so here is inexplicable, unless the clear sky of sunny France is an advantage wanting, which renders the flowering of this plant more difficult. However this may be, my own experience proves that it is not more difficult than the flowering most other greenhouse shrubs, and as it is possible that among the readers of the FLORAL WORLD, there may be some who still have a tender regard for this plant, and would like to hear something of an old friend, I freely tender my experience of it. We have at this moment a very fair specimen of it in full flower, not as I have usually seen it flowered, with a few bunches of flowers midway, with strong shoots towering above them, but a compact bush, surmounted by

many bunches of beautiful semi-double-pink flowers and buds. This plant was raised from a cutting in the year 1856, was shifted from a sixty into a thirty-two pot, and stopped in 1857; was shifted into a twenty-four pot in 1858, when it flowered, with three other plants, each larger than itself. It was then gradually dried, and cut down to the stout wood. It started again into vigorous growth, was shifted into a twelve pot the following winter. In 1859 it made an abortive attempt at flowering, but it stood out of doors, and the buds dropped off. It then took its chance till October following, when it was placed in a cold house for the winter, where it was kept pretty dry. In the March following it was stopped regularly, and as it broke freely and regularly it was potted on into a number six, and as it made a nice growth it was again shifted into a number two pot in the autumn. In that pot it is now flowering. As a proof that it is by no means tender, it withstood six degrees of frost on the night of December 24, last winter. It will perhaps be noticed that this plant grew two years without producing a single flower, but this was merely accidental. In 1859 it would have flowered had it been kept under cover, and last year was a bad season for flowering any plant, but this year it makes up for all; besides, the same conditions apply to this plant as to the *Kalosanthes* or *Crassula*, as formerly

called. We sometimes admire a well-bloomed plant of the latter, and forget, or never knew, that it never flowered before. In July, 1852, I assisted in placing upon the table, at Chiswick Flower Show, a specimen of *Kalosanthes coccinea*, measuring twelve feet in circumference, the form a parachute, the convex top was one mass of lovely scarlet bloom, it was grown by gentlemen known far and wide as first-rate plant growers (Messrs. Fraser, nurserymen), but this plant had never flowered before. Nearly four years of care had been bestowed upon it, and if one season's blooming will repay near four years of attention in a *Kalosanthes*, it will in a *Nerium oleander*; but this is by no means essential, the oleander will flower every year, if properly treated. After flowering, it should be allowed to get moderately dry, then cut down to stout wood, put into a warm greenhouse, gradually moistened, and allowed to make three or four joints before winter. Keep moderately watered, but see that the

drainage is perfect. As soon as it begins to start again in the spring, give some fresh soil, either by shifting into larger pots, or by surfacing; when in full growth give liquid manure, or mulch with rotted dung. As soon as the flower-scapes appear, three shoots will appear at the base of each; these should be carefully picked off while very young. The soil I use is composed of two parts loam, one peat, one leaf-mould and very rotten dung, the whole well sanded. The worst pest the oleander is subject to is the white scale. Now, every good gardener knows that this is the result, not the cause, of ill health; and ill health is caused by starvation, stagnation, or suffocation. For the first, good soil and root room; for the second, good drainage; for the third, ventilation. Let *Nerium oleander* have these, and it will repay the cultivator as well as any plant under the sun.

F. CHITTY.

Stamford H. U.

THE CULTURE OF THE FUCHSIA.

IN submitting the following remarks on the culture of the *Fuchsia*, the result of many years' experience and observation, I will first speak of the varieties, which may be divided into four classes: first, *dark*; second, *light*; third, *white corollaid*; and fourthly, *fancy varieties*. Of course the floral market can boast of numerous varieties belonging to each class, numbers of which, except for novelty, are unworthy of being cultivated; therefore, it is for the cultivator to know which are most suitable for the purpose he requires them; because some are *dwarf*, others *tall* and straggling in their habits; again, some are slender and graceful, others will flower prematurely without making the slightest disposition to grow. Now, we will consider what are the requisite qualities of a good *fuchsia*. First, a free growing, graceful habit, not rampant in its growth, but imparting in form as it grows that of a pyramid; the lower branches becoming widened in circumference as the upper extends; the second, fine healthy foliage; third, abundance of bloom; last, but not least, quality of the flower. Never banish one from your collection that pertains to the above perfection until you are satisfied its successor is a decided improvement.

I shall simply confine myself to the culture of the plant, supposing you grow

it for all purposes, exhibition and home decoration. If you propagate your own plants you would do so early in the spring, or in the month of July; I prefer the latter month if I cannot obtain cuttings till late in the spring, because those struck in July will not generally flower the same season, but continue to grow fast during the humid months of the autumn, and if convenience favours you, you can maintain their growth till their flowering season; whereas those propagated in the spring flower before the plants have had time to shape themselves, or acquire sufficient strength to form a good specimen for the future. In striking them use a little silver-sand, say about half an inch on the surface of the pot, cover the cuttings with a bell-glass, as that will hasten their rooting, take care to wipe the glass dry every morning. After they have rooted, pot them into three-inch pots. Place them on a little bottom-heat if you have it; if not, cover them with a hand-glass. Continue to shift from one size to a larger one, till you have gained your desired object, viz., that of a good-formed plant, suitable for the structure you grow it in, or the purpose you require it for. Now, during all these various stages of growth we will suppose you have carefully attended to the stopping or pinching off the shoots, with the view of inducing a bushy

habit; for instance, when the plant is fully established in its first shift you must stop the leader, if there is not a tendency to emit laterals regularly up the stem, and then again whenever you find the same fault prevail; so that the cultivator's eye must be constantly on the alert, watching his favourite objects as he would some little fondling. Some of the plants will not bear the direct rays of the sun when powerfully shed on them, so that they will need a slight shading, and all sorts require it during the hottest months of the year when in flower, or else the flowers will drop quickly; they will also drop if you allow the soil to become soddened by too much water, for this, like everything else, must be applied judiciously; by no means let them get dry, or the foliage will soon afford you evidence by turning yellow, and gradually using its healthy hue. During the last stages of the plant's growth you may apply weak liquid manure water.

If the plant is of a robust habit, it does not need so much stimulation. Now I will come to the kind of soil I employ. Here, again, a little judgment is required, as for such weak-growing varieties as Butterfly and Princess of Prussia, and others, it should be much lighter than that used for the stronger ones. The heavier the soil is the slower the growth, but a bushier habit will accompany it in its infancy.

I find them thrive well in the following compost, well incorporated:—One part good mellow loam, one part rotten dung, a little peat earth for making the soil light, and a fair sprinkling of silver-sand. Take

care and provide plenty of drainage and clean pots, and by following the above directions, success will attend your exertions.

And now for the after-treatment. When they have done flowering, let them be placed out-doors in a situation fully exposed to the due influence of the sun; this will assist in ripening the wood. Apply water sparingly, just sufficient to prevent them suffering through drought, so that they may by degrees lose their foliage, but by no means expose them on frosty nights, or the frost will materially injure the wood that produces shoots for the forthcoming season. Having accomplished the above, you may store them away in a cool part of the greenhouse, giving them just enough water to keep them from dying.

The fuchsia is a very accommodating plant, for it will commence growing at any period after a *rest*, if you like to excite it; but that must depend on the circumstances that are at your command for favouring an early growth, and also what season you wish to have it in flower.

I will now say something about pruning old plants previous to their new growth. Some of the sorts, partaking of a weak growth, will only require the ends of their shoots to be nipped; others of a robust habit will bear being cut in to three or four eyes; but the cultivator in performing this operation must have an eye to the shape he intends the plant to assume.

ROBERT OUBRIDGE.

*Church Walk Nursery,
Stoke Newington.*

FLOWERS IN TOWN WINDOWS.

THIS is the season when those who do not possess greenhouses will see the reward of their care and labour in the blooming plants which have been tended by them in-doors. The dry air of sitting-rooms must be counteracted as much as possible by syringing, by exposure to gentle rains, and by admitting as much of the atmospheric air as can conveniently be done. Green-fly may easily be kept down in small collections by picking and rubbing them off by the hand; or all the pots may be put into a frame closely covered up, and subjected to tobacco smoke. Do this in the evening and leave the plants till the morning, when they should receive a good watering by a fine rose or a syringe. Keep plants in pots moderately moist, without allowing water to remain in the saucers. By these means, and bringing in a succession as the former plants get shabby, a

window may be made very interesting to the amateur, and an air of elegance and refinement be given to the dwelling.

Plants may now be cultivated in balconies, and on the stone in front of the window, so as to give a beautiful and attractive appearance to the exterior of the house. Fuchsias and scarlet geraniums do admirably well for this purpose, as they will continue to bloom until the frosts of autumn disturb them, and require less care than most plants equally showy. Let strong healthy plants be potted in six-inch pots, in a light rich soil, and let these pots be dropped into others just large enough to admit the space of about half an inch all round; the inserted pot standing on moss or leaf-mould until its brim is on a level with that of the pot containing it. By this little contrivance, the hottest suns will be un-

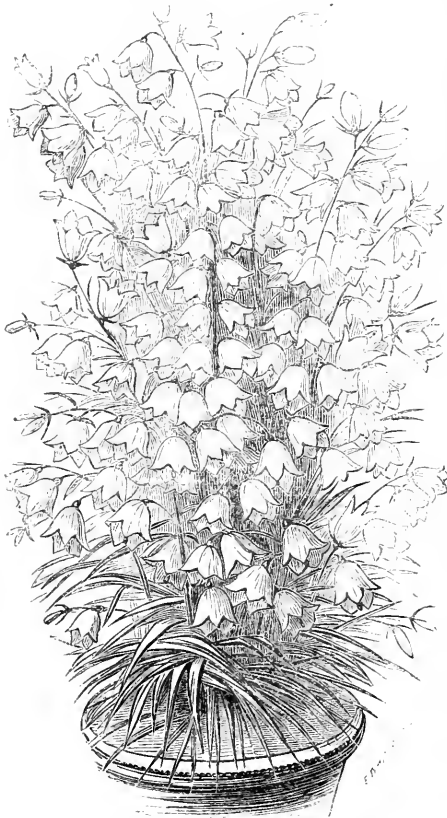
able to scorch the roots of the plants, they will retain moisture longer, and will flourish more luxuriantly. If a drooping variety of melisia is made to alternate with those of erect habit, a mass of bloom will be presented of great depth and richness. Other showy plants can of course be treated in the same way.

Take time by the forelock, and prepare for your collections next year, by purchasing or striking young plants. It requires some forethought to keep up a succession of window flowers without a greenhouse, but it may be done.

CAMPANULA ROTUNDIFOLIA ALBA, VAR.

At the concluding Exhibition of the Royal Botanic Society, July 3, great interest was excited by the magnificent ap-

pearance of *Campanula rotundifolia* alba, distinguished from the parent by the large size of its blooms, and its free habit of growth and flowering. As an example of its capabilities, it is worthy of mention that the plant from which our sketch was made, measured 30 inches high, and 45 inches in circumference, and was loaded with large bell-shaped, snow-white blooms in the most uniform manner. This new variety was raised from seed in 1857; it flowered the next year, and its distinctness was immediately observable as an improved seminal variety, in its greater vigour of growth, and larger and more rotund expansion of flowers. So great is the difference



CAMPANULA ROTUNDIFOLIA ALBA, VAR. (CHITTY.)

appearance of a new seedling *Campanula*, exhibited by Mr. Chitty, of Stamford Hill, and for which a certificate was awarded. This was an improved form of *Campanula rotun-*



CAMPANULA ROTUNDIFOLIA.

between it and the parent that it might be taken for a distinct species, and by some of the gardeners at the show it would have been so regarded but for the label setting forth its origin. Mr. Chitty carefully preserved the seedling plant, and has been propagating from it since, but has not yet sent it out. His object in thus delaying to make it public was to prove its constancy, of which there cannot now remain any doubt, as the stock now consists of hundreds of plants, and they are strictly uniform in character, showing no tendency to revert to the normal type. This will be a real gem for pot culture, and

also a very graceful ornament where an entire bed can be devoted to it, as it will continue in bloom from the end of June to the end of September. To have it (or its parent) in

perfection, the old roots should be taken up in April and divided, and the single shoots planted six inches apart, in the same way as is done with *Campanula carpatica*, by those who know how to manage it for bedding. The plants of this seedling exhibited at Regent's Park were wintered in a cold frame in forty-eight sized pots. Early in April they were shifted into twenty-fours, and six weeks after in twelves. They were only protected from heavy rains, and six

days previous to the day of the exhibition were placed against a wall, and some spare lights put over them. Such an improvement of an old border favourite entitles Mr. Chitty to the thanks of all who have the real interests of horticulture at heart, for the tendency of fashion is to thrust out of cultivation many old friends, which for intrinsic beauty cannot be surpassed by the gaudiest of novel importations.

BEDDING FUCHSIAS.

I WILL reserve some notes on bedding and propagating not of immediate importance, in order to offer a few remarks on the use of Fuchsias out of doors, so as to deal with the other side of the picture, painted so nicely in another page, by the master of fuchsias on this side of London, Mr. Oubridge. As my friend has introduced himself so ably to the readers of the FLORAL WORLD, I shall content myself by saying, that the best set of specimen fuchsias I have seen this season were those bloomed by him in a back shed, in his new nursery, and altogether hidden from the public eye-sight. For connoisseurs of these things it was a public loss that those plants were not exhibited. There was not a fuchsia fit to come into the same tent with them at any of the Regent's Park Shows this season, and if Mr. Oubridge had not been too busy in meeting the wants of his customers for bedding plants, he might have added largely to his store of gold and silver cups, and something to his balance at his bankers; Messrs. Loam, Leaf, and Silver Sand, being the trustees of his purse.

With Mr. Chitty in the fern and miscellaneous plant department, the best botanist about here; Mr. Oubridge in the way of bedding stuff, roses, and show plants; Mr. Kendall for Covent Garden; Mr. West for a bit of anything, from a score of Collards to a thousand *Caladium Chantini*; Mr. Grimby, the young beginner, making harlequin changes on the old worn-out nursery in Albion Road, Stoke Newington is on the mend in horticultural matters, and there is a fair prospect of its soon resuming the high position it once held for clever gardeners, well-kept grounds, valuable collections, and good nurseries. This has to do with fuchsias only so far as this, that, for years past, I have been collecting sorts, planting them out, taking note of their behaviour, and coming to conclusions as to their merits for bedding purposes, and I have

had to ransack the stocks at the nurseries to get together the varieties required. This season I have fuchsias everywhere except in places where they would be decidedly objectionable, as, for instance, in the neighbourhood of my lovely foliage ribbon, or near the grand bed of *Iberis Kermesina*, which is now a close convex surface of lilac crimson, rich and compact beyond the conception of those who know *Iberis* only as a weedy border flower. Some of them look only fit for the muck-heap; some are too strong in their growth, some too weak, but, taken altogether, they confirm a conclusion to which I arrived long ago, namely, that of all the greenhouse plants in general favour for decorative properties, the fuchsia is the very best for amateurs. I cast no imputations on other good things, these are times in which we must not praise one plant at the expense of another, I simply say, *all things considered*, and, *ceteris paribus*, the fuchsia is the best plant to begin with in any first attempt at practical horticulture, and the best thing to go on with until you attain to such skill in getting up specimens as my amateur neighbour, Mr. Harrison, or my nurseryman neighbour, Mr. Oubridge, who is as great in fuchsias as Mr. Holland is in pelargoniums, or the Messrs. Wortley, Ward, and Monk in chrysanthemums. Go back to last winter for the sake of an extreme case. Then in well-managed houses geraniums died by dozens; in ill-managed houses they died by hundreds, and all the hap-hazard ways of keeping them were simply and universally ways of losing them, for they died outright, and altogether. But the fuchsia, left to itself, is strictly deciduous, and there is a gain at once in the matter of merely keeping them. I had a large lot packed away in a house, which was simply shut up, without even a mat on the roof, and no fire, and the deaths were not more than five per cent. On the

turn of spring they broke as usual, without heat, and for cuttings in April were as good as the best that could be had from a duke's garden. Of course, that is late to begin with cuttings, but quite early enough for people who pursue the rotation system in flower culture, and who, if they manage it right, have no room for fuchsias till the end of June, the 1st of July, or, at the furthest, the 20th, and then want them ready to turn out with good balls, from forty-eight pots, and bloom at once, and continue blooming till the end of the season. When my Iberis is done, for instance, I can remove it in an hour, and replant the bed in another hour, and take my choice of half-a-dozen, or even fifty kinds of fuchsias fit for the purpose, or fill it with foliage plants, to make a novel effect, in harmony with the grand ribbon of Arabis, Atriplex, Antennaria, Perilla, and Phalaris. But it is just as easy to have a good show of fuchsias from the first week in June till the end of September, as to begin in July and go on till October; it only needs a little variation of the *modus operandi*, to begin growing earlier, to push on faster, to turn out sooner, and then to prevent the swelling of a single berry, and practise occasional stopping to produce a succession of new bloom-shoots. There is a certain grace about the fuchsia peculiar to itself, by which it compensates largely for the lack of gaudiness, for however rich in bloom a mass may be, through selection of the best varieties for the purpose, and the best management of them for the same purpose, they do not catch the eye as quickly as a mass of tro-pæolums, geraniums, or verbenas, and, perhaps, for that lack of "blaze," they are too often neglected in places where they would be the best of friends, by the little trouble they occasion to keep them.

There is another and not trifling advantage to the inexperienced, and that is the almost certainty of striking fuchsias even by the worst possible methods of propagating. If I knew a gardener to lose more than one per cent. of fuchsia cuttings, except by some special reason not here to be considered, I should set him down as a muddler, and I would not care whether a dung-bed, a first-rate tank, or a Waltonian case were the means of giving them the gentle bottom-heat necessary for a start. Then to add to their good qualities for people who are a good deal away from home, they want less ventilation than most other plants; they like a rather close atmosphere in their earlier stages of growth, and finally they are not half so particular about soil as they are reputed to be. You see what Mr. Oubridge says about pot culture, and

you will make a mistake if you go far away from his rules of practice. But when turned out in the open ground any good garden-soil will suit them if moderately enriched with rotten dung and leaf-mould, though dung alone without a scrap of leaf will do if leaf is a scarce article. Most of my trial plants are planted in a firm loam without manure, and left to grow as they please without stopping, tying, or dressing of any kind. That is the only way to ascertain the true worth of a plant for garden decoration; but one of its consequences is that a great many weedy and wild effects are produced, which people not acquainted with the mysteries of proving are apt to consider discreditable, so none but gardeners and thorough amateurs should ever get a peep at the proving-ground.

Looking over my fuchsias now, I come to a new and delightful conclusion, and that is that the best of all the double fuchsias are as good planted out as the best of the single ones. This is a real gain to decorative gardening, for we can now put Sir Colin Campbell into the best company in the open ground, and add thereby to the popularity of the hero. So again all the best of the white fuchsias are good when planted out; but the fancies, almost without an exception, are rubbish for this purpose.

Suppose now that a certain number of our readers purpose to do something extra with fuchsias out of doors next summer, now is the time to get the sorts together and to commence propagating. Fuchsias struck in August and September, wintered in a greenhouse averaging never lower than 35°, stopped soon after their first start in spring, and then shifted from sixties into forty-eights, will be what the gardeners call prime stuff for hardening off in frames and pits in April, to plant in their places in May, and to bloom immediately after and continue till near the end of the season. I intend to make a ribbon next year thus—back line, Alpha; next line, Duchess of Lancaster; next line, Bo-peep; next, Queen of Hanover; front line for edging, Meliezi. Now all these are old varieties, and still for this particular purpose unsurpassed. Alpha is not worth a rush as a florists' flower; it is all one colour, a long tube, and has no particular grace about it. But for a mass or continuous line there is not a showier fuchsia in existence, and it would beat out of the field any fifty of the best exhibition kinds of the red class if judged *en masse* for bedding excellences. Bo-peep is an old stock fuchsia with me, and has been used for years past with Roi des Blanches, Catherine Hayes, Little Treasure, Cœur de Leon, and Albert Smith; the three last being

admirably adapted for edgings to fuchsia-beds, as they may be bloomed at any height required, from six to eighteen inches. The cuttings for my fuchsia-ribbon will be made and planted within a week after this comes into the hands of my readers, as soon, in fact, as I can get the propagating-bed clear of roses with which it is now crammed full. They will be taken up in single stems to the heights required for each line, then be stopped and allowed to throw out side-shoots; these will be stopped, and the plants got to the condition of compact fuchsias, but to have only three shifts, first to thumbs from the cutting-bed, next to sixties, then to forty-eights, and the last shift will be about the middle of next March.

But I could do the ribbon nearly as well at much less trouble by waiting till February for cuttings, and to make the matter as simple as possible, I will suppose the reader to have the fewest imaginable means at command, and yet to be determined on using fuchsias freely next season. Choose your sorts now either from plants in the ground or in pots. Tally them, and determine how and in what numbers they are to be used, and make an entry thereof in your note-book. The plants in pots are to remain out of doors till the frost has shaken their leaves off, and then to be housed, and not to have another taste of frost all winter; to be kept nearly dry, but not dust dry, and to be neither pruned nor top-dressed, nor touched in any way till the 1st of February. Under the stage is as good a place as any for them, as they do not require light. Those in the ground are to be taken up when the chilly autumn weather has spoilt their beauty, and to save all the trouble of putting at a time when there is enough of that to do with other things, get some shallow wooden boxes or wicker baskets; lay down some rough stuff for drainage, and then pack them close together in clean sand or loam, give them one sprinkle of water from a rose, and stow them anywhere safe from frost, and they will want neither water nor light till the 1st of February, when the whole stock is to be set to work for cuttings. Those in pots should then be put in a comfortable temperature of about 50° by day, and 40° by night, and be syringed occasionally overhead, but have very little water at the root till they begin to push; then water more liberally, and as fast as they produce shoots from two to three inches long, take them off with a heel, dibble into silver-sand, and strike in dung-bed or Waltonian. On the same 1st of February shake all the plants out of the boxes, and pot them in rather fine stuff in sixties; say

equal parts of leaf-mould, dung rotted to powder, mellow loam, and silver sand. Pot them firm, sprinkle overhead, and give them a gentle bottom-heat, and you will have a supply of cuttings in a fortnight. After this the plants will tell you what to do with them by their looks. You will get the first batch of cuttings potted off, and a second batch going early in March; you will take care to stop as soon as necessary, and one main principle to keep in mind is to promote growth so as to have bushy, sturdy plants by the end of May or first week in June, and by that time showing for bloom at the ends of the ripest shoots. If any show bloom before the plants are stout and well furnished, nip them off and stop back. As I never value a fuchsia that requires sticks and ties, I cannot consistently advise you on the subject of training and supporting. It is to me a miserable spectacle, and no credit to the grower, to see fuchsias in beds tied up like a lot of cripples; if grown liberally, and got quite hard before planting, all the best dark fuchsias will hold up as firm as oak trees, but here and there in a mass of whites a few may want a little support; but if you grow as I advise, using good stuff as long as they are in pots, you will not have to spend much money in laths and bass for them.

Fuchsias like shade and moisture, they also like sun and safe drainage. So in places where there is a lack of sun, as in gardens much shaded with trees, fuchsias would generally pay well where geraniums pay badly. My forecourt is so densely shaded that geraniums never show half their proper beauty in it; but fuchsias do superbly; they get a glimpse of sun through gaps in the foliage overhead till about noon; then have full sun for about two hours, and no more for the rest of the day. This is just enough for them; they get their full and true colours, and hold those colours twice as long as if they were exposed to the intense glare all through the day. But my trial fuchsias are all exposed to full sun, get no artificial watering, and have not a stick to assist the weakest in holding up against the wet and wind. Amongst old and new, which now stand together, Alpha and Bopeep are the most conspicuous for distinctiveness and effect. The newest are easily detected without noticing colours or looking at tails by their thin leafage, a peculiarity of nearly all the fuchsias sent out within the last four or five years. Nevertheless, strength of constitution has not been much sacrificed by high breeding, as witness the fine foliage of Sir Colin Campbell and

Smith's Mammoth, the last being a wonder of wonders, and the grandest fuchsia ever raised. Nevertheless, there is a certain lightness advantageous to the display of the flowers in fine specimen plants, noticeable in the majority of the best fuchsias of late years, but this lightness is not to their advantage as bedders, for no thin-leaved fuchsia will make so stout and sturdy a stem as a heavy-leaved one, and in Boceep you have the perfection of foliage for an out-door fuchsia. In full sun it is the richest dark green imaginable, and the substantial reflexed blooms literally sparkle amongst the bluish green leaves like rubies. Next in merit as a bedder in this dark class I should place *Souvenir de Chiswick*, of which I have some plants on a raised

bank among ferns, cammas, and grasses, which want the relief of a little colour, but being such graceful things, it would be a gross violation of taste to group such lumpy things as geraniums with them. Lifted up above the level in moderate shade, amongst masses of the most elegant foliage, I can imagine nothing better than those plants of *Souvenir*, smothered as they are with their exquisitely-proportioned flowers. But here we are getting into the classification of sorts, and as I wish to see a few of the newest bloom quite out before finally reporting on them, I will detain my notes on the varieties till next month, and then give a classification of the best in the several classes, and colours as adapted for out-door decoration. SUNLEY HIBBERD.

PROFITABLE GARDENING.

CHAPTER XIX.—CULTURE OF THE APPLE.

THOUGH turned aside for a while from the subject of profitable gardening, by the pressure of the events of the season, and the attractions of floriculture, we hope, for some time hence, to continue our papers on the strictly utilitarian department of our work; and as we now enter the fruit garden, the apple claims, of necessity, the first place. For real usefulness, for productiveness, for certainty of produce, the apple is deservedly the most renowned of British fruits. The cottager values it not more highly than the possessor of graperies and peach-houses; for, with all the appliances of high-class fruit culture, the apple still claims a full consideration of its merits as an element in the best dessert for a lordly epicure, as well as the most substantial pudding for a hungry ploughman.

Make sure of good apples before you plant a single tree of any other kind, if fruits are to have any portion of your skill in gardening.

The common crab of the hedges is the only apple indigenous to this country. All our garden and orchard apples are either importations from the East or seedling varieties obtained from kinds which were imported in the first instance. The common origin of the cultivated varieties is important so far as this, that, as not

being indigenous to this country, it is not to be expected that any of them will thrive without some amount of care; if neglected and allowed to run wild, they must deteriorate, and if subjected to a succession of adverse seasonal influences, it is impossible they should continue either so productive or healthy as during seasons eminently favourable to their general requirements. The common supposition that the apple is a native fruit, has acted injuriously by inducing carelessness in their preservation, and it is quite certain that the culture of the apple is not generally understood, else we should see less of that pest, the American blight, and less also of that barren condition of old trees, which meets us everywhere in orchards and gardens, and for which by the proprietors no reason can be assigned. We have no hesitation in saying that a barren apple-tree is an anomaly, and that the production of apples might be increased five-fold in this country without the planting of a single tree in addition to those already occupying sites in private grounds. The apple, though esteemed, has been very generally abused; it is so hardy, so fruitful, so adaptable to a variety of soils, aspects, and climates, that the little care it asks for is too often denied it altogether, and so for

every single tree in robust health and good bearing, there are at least a dozen suffering from canker, and using space both above and below ground to no purpose whatever, except to disfigure the ground and reproach the proprietors. Before we enter on a distinct relation of the routine of culture, we will remark that we have had large experience in the culture of this fruit in all the forms it is capable of assuming for productive purposes, as standards, espaliers, pyramids, bushes, and ornamental trees in pots, and we have not only found amusement in the growth of seedlings, but also in the recovery to health of trees that appeared worn out and worthless when we first took them in hand to renew their youth. In 1859 there was scarcely an apple to be seen in the neighbourhood of London, but our trees were loaded almost as heavily as in that year of excessive fruit production, 1857. We are now writing within view of apple-trees on all sides of us, on which there is scarcely any fruit to be seen, while our own trees are covered with them so that the branches bear some resemblance to ropes of onions. Our neighbours' trees appear to be expected to take care of themselves; our own are cared for systematically, and therein lies the secret of the difference. Make a survey of any district of the country, and the same thing will be seen—a garden here and there where the fruit trees are always healthy and productive, surrounded by gardens where crops of fruit are like angels' visits, few and far between. We dwell on these particulars in order to fix upon the mind of the reader the importance of pursuing horticulture as an art, and in order to gain attention for what observations we shall make on the essentials of apple culture. If every apple-tree in the British empire did its duty, the aggregate produce would, in the course of a few years, amount to a value sufficient to pay the national debt, for though excessive production may lower prices, articles of real utility have their minimum, while articles which depend for their value on fashion and caprice, have no mini-

um, and may end in being of no value at all. It must be remembered that the apple is an article of food as well as of luxury, and every grower of it adds to the resources of his country in the exact measure of success with which his efforts are attended. Let us, therefore, consider how to improve the collections that exist, and then go through the processes involved in the formation of new ones.

After attaining about fifteen years of age, the apple naturally forms fruit spurs, and ceases to grow so luxuriantly as in its youth. Young trees will bear at from five years of age, but fitfully for some few seasons, until the tree has acquired a bearing character and has ceased to grow luxuriantly. At three years, even, some varieties of apples will bear well under peculiar modes of management, as by annual lifting, summer pinching, and the choice of a dry and elevated position. But early bearing is not in itself so desirable as the formation of sound wood, and a regular disposition of healthy branches to form fruit spurs, equally exposed to air and light. Hence a certain age must be attained by a tree before it will begin to repay for first cost and the rent of the land it occupies. Now the barren trees of which complaint is made are mostly mature in growth, have capacious heads, and are not only well furnished with fruit spurs, but also with annual crops of bloom, so that there is every disposition on the part of the trees to form fruit, but some unknown cause prevents it. It must be the business of the possessor of such trees to trace the barrenness to its cause, and then to apply the remedy. Suppose we are now asked as to the restoration of such an example of mismanagement. We observe first the bark of the stem: it is foul beyond description; vermin lodge in every crevice; we pull away a few loose pieces, and our hands are covered with the sticky webs of insect nests; and along with insects and dirt, which fall out in heaps on being disturbed, there is an admixture of *sawdust*. That tells us we shall presently discover an entrance to the heart of the tree. It is, in fact, bored

to the centre, and mined through a great part of the stem with insect-galleries, and at one point the bark is destroyed all round the tree, with the exception of a strip two inches wide, which, being unhurt, is all that remains to carry on the circulation between the entire head of the tree and its roots. There can be no need for philosophizing here; the tree wants cleaning; it is perishing with the accumulation of filth; and the sawdust, as one may call it, which is seen in little heaps in the approaches to the orifices of the galleries, is simply the *debris* removed by the process of insect-boring in the heart-wood of the tree. Is it fair to complain of a tree being unfruitful while the trunk is in such a condition? Such was the case with a once fine tree of Hawthorn-den, which came under our care four years ago. The bark was destroyed, and the wood cut into it as if deeply burnt by the application of a hoop of red-hot iron. Only one inch of bark remained to sustain the flow of the sap. That tree is now loaded with as fine a crop of apples as any tree of its size in the three kingdoms; with more, in fact, than it will be able to carry, as their weight increases towards ripening; and the inch of bark which kept it half alive is now three inches wide, and has swelled out into a large knee of new wood, the simple consequence of prompt treatment. As the vermin could not be got out from their tunnels, they were suffocated by a dressing of grafting clay, with which was incorporated a large proportion of soot and sulphur. This was rammed into every one of the holes, and every wound was stopped with it. A broad strip of canvas was then bound round the tree, and the canvas washed with hot tar. The cause of destruction ceasing, the tree at once began to recover. In due time the bindings got loose, a proof that the tree was shaking off the withered bark beneath them, and, on its removal, it was found that the original strip of connecting bark had extended itself in the direction of the girth of the stem right and left, and the improved health of the tree was shown in its immediate production of

new wood of the most robust and promising character. Suppose the cleansing and dressing to cost an outlay in time and materials of ten shillings, which is the utmost it need cost, the next crop returns the whole of the expenditure, and possibly a profit of two or three hundred per cent. upon it.

Making a similar inspection of another tree, situated perhaps, in a different part of the same orchard or garden, we find the bark dirty but sound; at every junction of a bough with the stem, and wherever there has been a wound or scar, huge masses of white woolly material are deposited, and these, when touched, communicate to the finger a disgusting chocolate-coloured stain. Here is one cause of declining vigour in the ravages of American blight. Looking at the extremities of the shoots that ought to be loaded with apples, we perceive instead of fruit, a number of warty protuberances, and similar productions abound on all the main boughs, especially at the points of junction with them and the smaller shoots on which the bearing spurs are placed. The tree needs cleansing, and it needs also to be lifted up out of the wet, for those gouty warts are proof that its roots are too cold, too much soddened with water, and probably run too deep into a cold clay, or sour gravel. The cure in this case is more difficult, but not impossible, and with a plantation so circumstanced it may appear too formidable to be attempted. Nevertheless, however difficult, if properly set about, it will always pay to work an effectual cure, though it might be a waste of money to half do what is so obviously needed. The trees cannot be lifted, but they can be root-pruned and drained. Another inspection shows that the ground is covered with suckers from the roots, and the tendency of the trees to become bare in places, indicates to us that they have exhausted the soil they are growing in, and in their attempts to find fresh sources of nourishment have struck their roots into a boggy subsoil, and are perishing in the attempt to live. Supposing this to be the case with an orchard planted regu-

larly, the first process of renewal would be to cut deep open drains or ditches to the nearest outfall, these drains to run between every two rows of trees. These drains will give immediate relief, and by removing superfluous water, enable the trees to ripen the wood of the season and perhaps make an improved appearance the following year. With the fall of the leaf should commence the renewal of the surface-soil. The suckers to be stubbed up; the soil to be removed from the roots to a reasonable depth without injury to any of the main roots, and all surface fibres to be preserved as far as possible; those really injured to be cut clean back by a regular process of pruning. If new soil is spread over the surface to the original level, it will be full of roots before the next spring, and the trees will show such an improved appearance as to justify the expense of finishing the drainage properly, and completing the minor work of pruning and cleansing as the case demands. It is rarely that American blight gets a firm hold of trees that are dry and healthy at the roots; indeed, the appearance of parasitic vermin is generally an indication that the tree is diseased from other causes, and to merely attack the insect pests is to make but one step towards final recovery. The simplest of all processes for the eradication of American blight has often been described in these pages. In the course of one winter we restored to the most perfect state of cleanliness a number of trees that appeared hopelessly infested with this destructive pest. They were literally covered with running wounds and were alive all over with the tenacious masses of white cottony threads of *Eriosoma lanigera*, the ruin of half the apple-trees in this country. The process consisted in first scraping off with a piece of iron hoop the looser portions of old bark, and then scrubbing them all over with a dandy brush soaked in warm brine. Though a tedious and tiresome job it proved in execution less formidable than it appeared. The trees were first pruned so as to remove all dead, ill-placed and very

much diseased shoots. The ground under the tree operated on was covered with old mats to save the grass, and mats were thrown over the trees and bushes within reach of the splashes. The workman then planted his ladder, took up with him a pailful of warm brine, and commencing at the extremities of the boughs scrubbed them all over from head to foot. All the prunings and scrapings were burnt. The ground all round the trees, as far as the roots were considered to extend was then soaked with the strong drainings from a dung heap to poison whatever insect life had escaped the brine in the scraping of the bark, and to refresh the roots of the trees with a wholesome stimulus.

But the renewal of the soil to the depth of the main roots may be too great a task, and may not be necessary. Nevertheless, in all cases of want of vigour, surface-dressing must be resorted to, and an immense improvement may be effected by paring off the surface two or three inches only, and laying on a mixture of fresh loam and half-rotten dung in its place. Without plenty of surface-fibres in an active state of absorption, no fruit tree will ever make a return sufficient to cover the rent of the ground it occupies. Almost any fresh soil will serve the purpose; charred rubbish, old turf, the clearings of a muck-pit, or the black soil from the bottom of a ditch or pond, are all excellent dressings, but should never be applied without removing first a portion of the old surface, in which generally there are multitudes of insects and their eggs waiting till the return of spring to renew their ravages.

Over-luxuriance is not so easily subdued as many writers have asserted. When a tree produces a multitude of gross shoots, and shows no sign of disease, root pruning may be of great service, but is a difficult operation. A method often resorted to by gardeners in such cases is to allow the gross trees to carry all the wood they make, but this is a mistake. Instead of allowing strong shoots to run away to an extravagant length, in the hope

they will exhaust themselves, it would be much wiser to stop them early in June; then to stop all their laterals, and in November to cut them back to range with the general outline of the tree. To allow gross shoots to push their full length is simply to hand over the whole of the tree to a few rampant leaders, and defer, perhaps indefinitely, the formation of spurs. But by regulating the growth of the head, by stopping all shoots that threaten to monopolize the sap supply, and insuring the exposure to light and air of every part of the head, a bearing habit will in time be induced, and the production of fruit will reduce the vigour of the tree by a natural process.

One more remark may be of use to those who lament the unfruitfulness of their apple-trees. The careless way in which many gardeners remove large boughs, is often the ruin of good trees by causing the formation of masses of weak spray which can never be of real service unless a careful selection is made of the best placed shoots, and the rest removed by a clean cut, so as to force the sap into a certain set of the leaders to replace the boughs that were injudiciously removed. Where the branches are crowded, and the sunlight is thereby intercepted, the pruning-knife may be used with great advantage to effect a general and moderate thinning. Ill-placed shoots should be removed by a clean cut at their junction with the branches from which they originate. The best season for a general supervision and pruning is immediately after the gathering of the fruit, as every scrap of dead wood can then be detected instantly, and the wounds caused by the knife and saw will heal more

quickly and effectually than if the pruning be deferred to the usual season. Lastly, in this matter of dealing with old trees, let it be borne in mind that the sudden removal of a large amount of live wood from any tree is unphilosophical, cruel, and destructive. What is to become of the sap that fed those branches? It will force into growth a forest of watery spray, it will throw an excess of vigour into the most fruitful branches, and render them gross and unproductive, and it will also, perhaps, escape by extravasation, and form wounds which may result in the total destruction of the trees. However long neglected the trees may have been, and however severe may be the pruning required, the removal of the objectionable branches must be effected piecemeal; they must be cut back a third of their length the first season, then to half their original length the next, and be finally removed the season following. This will save the trees the shock of a too sudden reduction of leaf surface, and enable them to dispose of their sap in channels where it will be useful. There is one good and golden rule to be observed in regard to standard fruit trees of all kinds if doing well, and that is, to leave them alone. Though a crowded head may need thinning with the knife, pruning is not to be considered a regular routine process; when apple-trees come to mature age and a good bearing condition, the knife can be of little benefit to them, but effectual drainage and occasional refreshing of the surface-soil will maintain them in full vigour, and combine in their growth the fruitfulness of age with the strength of youth.

BEGONIAS AND CALADIUMS.

WITHIN the last three years the progress of horticulture, and the introduction of new and beautiful plants, has been more rapid and extensive than in any former period. In order to prove our assertion, we need only point to two families of plants—the Begonias and Caladiums. It was

only a few years ago that *Begonia Rex* was sent out by M. Linden, of the Botanic Garden of Brussels. It electrified the gardening world. In less than a year, so rapidly was it propagated, there was scarcely a garden of any pretensions where its beautifully silver-zoned leaves were not seen

and wherever they were seen they were admired. But now we have dozens of varieties of the begonia, all brilliantly coloured, and variously dotted, blotched, and zoned. *Caladium bicolor*, too, was well known and highly prized in our gardens; but it is completely eclipsed by the splendid kinds which have within the last few seasons been introduced by M. Chautin, the Parisian nurseryman. He is said to have imported them from the humid forests of Brazil, where they were collected by a French botanist, after whom one of them is named, M. Baraquin. So beautifully coloured are these caladiums, and so varied in their tints, that a group of them, relieved by a few long and narrow-leaved plants, produce a most charming effect.

The cultivation of both the genera we have mentioned is so extremely simple that these beautiful productions are rapidly becoming "plants for the million." To a certain extent, they both require the same kind of treatment; they both enjoy a light rich soil; they both require stimulating with a little moist heat in the spring; and during winter, when room is always valuable under glass, they may both be laid upon their sides under the stage, or any other convenient place where they will be warm and dry. In the latter end of February or beginning of March, all the old soil should be shaken away from the stems of the one and the tubers of the other, and they should be repotted in a very coarse mixture of peat and leaf-mould, with a little fibrous loam and a plentiful admixture of sharp river-sand. We have found the begonias grow more luxuriantly when the soil was sifted (before adding the sand), and the coarse part only used. With the caladiums our plan is to sprinkle a little sand below and immediately around the tuber, which is potted with its crown about an inch below the surface. After potting, they may be plunged in a good sweet hot-bed; there is no place equal to this for starting them into growth, though when it cannot be obtained, one must put up with a tan-bed in a moist stove or pine-pit. Water should be given but sparingly, that is, only in sufficient quantities to keep the soil from becoming dry, until the plants have started into growth freely, when it may gradually be increased. As soon as the plants have attained a good size, they may be employed in the decoration of the conservatory, where, if the house be kept a little close, they will retain their brilliancy for some time. With regard to the propagation of the begonia, nothing need be said, for everybody now knows that if a leaf be taken off and laid flat on the sur-

face of a hot-bed, it will be well rooted in a few days, and if a slight incision be made across the principal veins, as many young plants may be obtained as can be required; the leaves of some of them may even be chopped into little pieces, and each piece will make a plant. They want no care or trouble taken with them; all they require is to be laid flat on the moist surface of the soil, in a warm close place, even a bell-glass is superfluous, and, unless there be draughts of dry air, worse than useless.

The propagation of the caladium is a slower process, but as there are thousands of hands employed in this operation, they are daily becoming more plentiful, and their price decreasing in a like proportion. They all make offsets readily, some of them, *C. argyrites* for example, increase very rapidly in this way. But if it is requisite to propagate them as quickly as possible, a slight cut should be made in the lower side of the tuber before potting, and this should be filled with powdered charcoal to prevent its rotting.

Caladium argyrites is a perfect little gem; its leaves are not more than two inches long, and about half their surface is of a pure opaque white. *C. Balleneyi* is, perhaps, the most delicately coloured; it is all white except the principal veins and the margin of the leaf, which are of a bright green; there is also generally a flush of rose-colour in the centre of the young leaves. *C. Chantinii* is a general favourite; it has bright rosy pink along the main ribs of the leaf; the parts between them being white, and the edge of the leaf pale green. *C. Verschaffeltii* has dull red spots sprinkled over its surface irregularly. In *C. Neumannii* these spots are of a livid tinge, and each one margined with white. *C. Wightii* has spots some of which are pure white, others red, irregularly sprinkled. *C. Brogniartii* is like the old *bicolor*, but with larger foliage, and the colour of a more intense and brilliant crimson. The main ribs of *C. Houlettii* are of a creamy colour, and there are white spots between them. *C. Troubetskoi* and *C. Baraquinii* are more like the old *C. picturatum* in form; that is, the leaves are longer and narrower than in the other kinds, and both are highly coloured. Mr. Veitch possesses also a new caladium, named after himself, which is of a most peculiar colour—a sort of violet purple—it is very distinct and striking. Among the older kinds there are several which are well worthy of cultivation, as *C. pictum*, with large irregularly-formed blotches of white, *C. pœcile*, with livid crimson veins and spots, and *C. marmoratum*, with

white blotches, and others of a silvery tinge. *C. hæmatostigma* is a large and coarse growing kind, the spots of which are not very well defined.

SEEDLING RHUBARB.

As the Rhubarb is a plant which produces seed very freely, almost the whole of which will germinate, it is impossible, with the largest space of ground, to have the whole of them planted out so as to put the qualities of the seedlings to the test. As the readiest way of ascertaining which of them are most likely to repay the trouble of cultivating, I have found it an excellent plan to sow the seed in pots as gathered. These being kept under cover during the winter months, not so much as a protection to the plants as for the sake of preventing the pots from being injured by the frost, the young plants will be found to vegetate very early in the spring; showing from the first a difference of character, not only as to precocity, but in other respects also, as to growth and habit. Even at this time, therefore, some may be selected as the subject of experiment, and planted out; but the preferable plan, I think, is to allow the whole to remain in the seed-pots till the end of the season, when the difference of character is more decidedly marked. Those of the earliest and strongest habit will then have gained greatly on the others in point of size, and will otherwise show the qualities which should determine the selection as to which are most likely to reward the cultivator by turning out a new and valuable variety. The qualities in question I hold to be, chiefly, a stalk that is thick, succulent, and a red colour; and a leaf that is round in shape, smooth on the surface, and a fleshy texture.

In this way, the plants which make the best promise may be selected; but my remarks as to the subsequent treatment apply equally, if not more, to the best of the varieties already in cultivation. The mode which I pursue is this:—Having chosen

ground with a warm aspect, I have the soil dug out down to the subsoil which, in the instance now referred to, is chalk at no great depth, say from eighteen inches to two feet. The space so dug out is about two feet in diameter. Of the earth dug out, I reject the lower and poorer portion, mixing the rest with leaf-mould, and with fresh soil of as good a quality as I can procure. The soil thus improved I further enrich with guano, superphosphate of lime, soot, and bone-dust; all, or as many of them as I can at one time command, not forgetting some well-made stable-manure. The whole of these being thoroughly incorporated with the soil, I place at the bottom of the hole, above the subsoil, a layer of bones of a considerable size, over which is put some of the mixture to the depth of six inches, then a few more bones with more earth, alternately, till the hole is not only filled up, but there is a hillock, say of a foot and a-half above the level of the ground. In the centre of this I make an opening and fill up with leaf-mould, or any other good unmixed earth, for the reception of the plant, in order that the roots may not touch the richer soil until they are in a growing state, before which they might be injured by the strength of the manure.

As a proof how well this has answered with myself, I may state that soon after the Prince Albert was introduced, now I should imagine at least twelve or fourteen years ago, I had three small plants of it, which I treated in the manner here recommended. Though put in at a distance of six feet from each other, they now appear like one large plant, the heads being joined together, and the crowns of the roots approaching very near.—*Rev. C. Muckie, in Horticultural Society's Proceedings.*

HINTS ON PROPAGATION.

It has long been customary with gardeners, previous to planting cuttings of a succulent nature, to leave them, for a time, in a *dry* shaded situation, in order that the superabundant sap may be evaporated, and the wounds a little healed over. On the other hand, the practice, as is sometimes done, of putting vine eyes in a *damp*, shady place, is an excellent preparatory process in the propagations of things of

sterner stuff. But a cutting of a medium texture—a rose cutting for instance—can withstand neither of those modes of treatment; it will quickly shrivel in the one case, or blacken and die in the other. Clearly, then, in order to obtain that great desideratum—the development of the callus, recourse must be had to at least three different modes of procedure, according to the nature of the subject under treatment.

Is this, then, as it should be, or is it not more reasonable to suppose that this peculiar exudation, Nature's own healing salve, would be developed in all cases alike, and under one particular set of circumstances, provided the proper medium were once thoroughly understood?

An approximation towards this end has at length been made. Common sharp sand dried until it will stream through the fingers like that in a sand-glass is the article employed, and a rough wooden box, or anything tight enough to contain so tickle a substance, is all the apparatus required. The vessel may be filled brimful of sand and cuttings in alternate layers, and must then be buried out of sight under a greenhouse stage, or any similar place, where the underground temperature will be comparatively steady and not too warm. The exact degree of warmth required, and which may be readily ascertained by experiment, is, I opine, the greatest amount they are able to bear without endangering the bursting of the buds, which, of course, would exhaust the sap and thus defeat our object. The callousing process completed they must then be gradually inured to the usual amount of heat, light, air, and moisture of the propagating house.

A word here in regard to the nature of the callus, as very erroneous ideas are sometimes entertained by gardeners concerning it. Some are under the impression that it is nothing more or less than a bundle of roots in embryo, which may or may not be developed according to circumstances; and I have never heard anyone speak on the subject, who did not seem to take it for granted either that the rootlets issue immediately from the callus, or that, come whence they may, they penetrate directly through it. In a series of articles on the "Science of Gardening," at present appearing in an English periodical, the writer takes the same ground and more than once affirms that roots are emitted

from the callus. Now, unless I am strangely mistaken, such an occurrence rarely if ever happens. After examining hundreds of rooted cuttings I am clearly convinced that the root fibres are in all cases emitted laterally from near the base, and that in those instances in which they do seem to issue from the callus, it is merely an illusion caused by the swelling of the latter, around the ends of the cuttings. Dr. Lindley remarks that, in "cuttings the callus, which forms at the end placed in the ground, is the cellular, horizontal system, preparing for the reception of the perpendicular system, which is to pass downwards in the form of roots." This is so theoretically, but, as before observed, it is highly improbable that the perpendicular system is ever so received, the roots showing a much greater affinity to their new surrounding than they have to the callus, of which they are entirely independent.

In the work from which the above quotation is taken, the "Theory of Horticulture," the callus is spoken of as "those processes which usually precede the formation of roots," and this is, indeed, the only point that we as gardeners need care much about. Once become fully impressed with the belief that any attempt to excite cuttings prematurely is wrong in principle, and we are then able to account for many of those failures in propagating which otherwise appear to us inexplicable.

One other remark before I close. Last spring I selected a few sticks of pear buds and also a few quince shoots of a corresponding size. The quince cuttings were made into lengths of three eyes each, the middle eye neatly cut out and a pear bud inserted in its place. When I examined them some time after I found every one of them beautifully united, and also the quinces calloused at the base. Can the idea be turned to profitable account?—*American Gardener's Monthly.*

GARDEN AND GREENHOUSE WORK FOR AUGUST.

AZALEAS may yet be propagated by cuttings from young wood, taken off close to the shoots from which they issue, and planted in sand under hand or bell-glasses. As soon as rooted, put them singly in fibry peat, with a good admixture of sand, and plenty of drainage.

CALCEOLARIAS may be propagated now from short stubby side-shoots. Fill the cutting-pans with a mixture of half peat and half sand.

CAMELLIAS, to flower early, may be brought into the greenhouse; the remainder may remain out till the end of next month, be propagated now with the least possible amount of trouble, and cuttings should be

DAHLIAS to be frequently looked over, to see that they are staked securely, to remove superfluous shoots, and loosen any ties that have become tight. Disbud freely plants intended to furnish flowers for show.

GREENHOUSE PLANTS of all kinds may

got in at once of all sorts of which stock is required for next year.

GRASS PLOTS may now be sown down. In the majority of cases seed is preferable to the laying of turf, as the finest grasses can be had in suitable mixtures, free from weeds; but close fine turf, from sandy commons, will make good lawns at once on well-drained ground, and if laid now will be established before winter.

HARDY FRUITS may still be budded. Sweet oil, applied with a brush, will remove American blight from apple-trees effectually, without injury to the bark. Generally speaking, fruit trees are in fine condition this season, and there is a probability of the wood being perfectly ripened.

HERBACEOUS PLANTS may be propagated largely from side-shoots, dibbled into sandy soil in a shady place, or by parting the roots of those that have done flowering.

KITCHEN GARDEN.—Winter greens should, by this time be strong and ready for their last transplanting as the ground is cleared of potatoes, etc. Sow cabbage for use next spring and summer. Early Battersen, Enfield, and Sprotborough will be the best. Cauliflower to be sown about the 20th. Sow Coleworts about the 8th, for plants to stand the winter. Onions that are bull-necked may be induced to ripen by breaking the leaves near the ground. Get up potatoes as soon as the haulm begins to show signs of decay, without waiting till it withers, as they will ripen after they are stored, and the gain of a week or more in their removal may save them from disease, which rarely appears till they are full grown.

MIGNONETTE, to flower in the winter, should be sown about the 10th. Use light sandy maiden loam, with a little leaf-mould, but no dung.

EXPERIMENTS IN FRUIT CULTURE.

Among others, I had the pleasure of making the acquaintance of Mr. Pell, whose name I have often mentioned. This gentleman is known to fruit-growers as the owner of a famous orchard at Pelham Farm, on the River Hudson, containing 20,000 apple-trees, chiefly of that highly prized Newton Pippin, for which London alone affords an almost insatiable market.

I was much interested with the history which Mr. Pell gave me of the chemico-physiological experiments he had for some years been making in his orchard, taking a hundred trees at a time upon which to try a single experiment. One of these trials had been to ascertain if it were not possible to compel apple-trees to produce a good crop of fruit every year, instead of once in two years only, as is usually the case in Europe as well as in America. He found that by cleaning off the rough bark, pruning carefully, slitting the bark as high as the first branches, and digging in lime around the roots in autumn, he had a heavy crop the succeeding summer. By

digging in, the second autumn, stable manure, around them, he had an equally heavy crop the second summer. The general result of his trials is that a crop may by such treatment be secured every year, but he thinks the tree would not live so long a life. Still, if the flavour of the fruit be as good, and the expense of tending not too great, it would be easy to have a second set of trees coming forward while the first grows old, as is the case in the peach orchards of New Jersey. There would be less cost in this also, if we adopted Mr. Bell's mode of procedure. He cultivates the land among his trees—a strong, deep, sandy loam, on a gravelly subsoil—as if it were open, with every kind of crop except rye. In regard to this grain he states, that “it is so injurious that he believes three successive crops of it would destroy an orchard of less than twenty years old.” Is there really, then, some special action exercised upon the soil by this species of grain?—*Johnstone's Notes on North America*.

TO CORRESPONDENTS.

HOW TO USE A MOWING MACHINE.—*W. D. B.*—The following instructions apply specially to Samuelson's Boyd's Patent Lawn Mower, and generally to the machines of other makers. Push the machine steadily before you along the turf, at the same time pressing the end of the bent lever towards the outside of the machine, which puts the cutting knives in operation;

and to put them out of gear, move the lever towards the middle. To regulate the height of cutters you have only to turn the small horizontal wheel's marked “to lower” or “to raise” in the direction indicated by the arrow, an operation that can be performed instantaneously, to the greatest nicety, without the necessity for removing the grass box, or altering

the position of the machine; in doing this it is necessary to first loosen the six-sided nut, which will be found on the screw under the horizontal wheel, then tighten the nut when the proper height for cutting is fixed. Set the brush by means of the thumb screws at each end of that apparatus, so that the bristles *just touch* the knives as they revolve. This brush not only cleanses and sharpens the cutters, but enables the machine to be used in all weathers without clogging. The spiral cutters should just touch but *not press* upon the flat blade; when the edges are worn so as not to touch it, lower the cutters by means of the adjusting screws at each side of the machine immediately over the bearings of the roller on which the knives revolve, until they again touch the flat blade above referred to. To sharpen the cutters, you can occasionally place a little emery powder along the length of the brush, previous to working the machine, and should the knives require *grinding*, put a little oil and emery on the bottom blade, screw the iron handle (sent with the machine) in its place in the large toothed wheel, and turn it backwards for a minute or two, then take off the handle, wipe the cutters, and go on with your work. Lubricate the ends of the different axles and other parts of the machine frequently, and when out of use, screw the knives as high from the ground as possible, this will keep them from being injured by stones and other impediments when waaling or from the grass. Oil the cutters and blades, and all the bright parts of the machine when out of use, and put it under cover.

SCHEDULES OF EXHIBITIONS.—The Hylton Floral and Horticultural Society will hold an exhibition on the 29th of August. The list of officers is a guarantee of good management; there are two active secretaries, a simple and practical body of rules, and a liberal list of prizes. Besides the usual entries, ladies are encouraged to compete in the exhibition of wax flowers, wax fruit, and bouquets of natural flowers.—The Cottingham and District Exhibition will be held on the 21st, and will include flowers, fruit, cottagers' and farmers' produce, and poultry. Nothing in the way of exhibitions gives us more pleasure than those that are strictly local; they promote good neighbourship, improve the social character of the district, and aid in the spread of useful knowledge in horticulture and agriculture alike. One small local show is, we believe, ten times more beneficial in enlarging the national resources, and improving the tone of society than half-a-dozen of the great and grand exhibitions that draw together miscellaneous gatherings of sight-seers.

DE RHEIMS' PAPER.—*E. T. F.*—We are glad you made the inquiry, because it enables us to say that with the paper we received a sample of the product, a thin sheet of shining paper, from which, when the tongue was applied, there was a strong taste of Cayenne pepper. We had a wound in the hand, occasioned while grafting some plums, and talking to two or three friends at the same time, and to that wound we immediately applied a strip of the paper, and the wound was healed as if by magic. So much for one experience of its value. In regard to chilblains we can give no testimony, not knowing practically what they are. The capsicum may be used either fresh or dry, but *they must be ripe*, or they have not their proper virtue. The mixture of the tincture with the gum-water must be a matter of individual trial, because the tincture and the gum may vary in strength according to the ripeness of the capsicum and the quality of the gum. As the gum is merely to make the paper adhere, the proportions will be discovered without difficulty. This part of the process is like putting

salt in soup; no one can say how much, because one soup will require more or less than another, and even then palates differ.

HONEYDEW—JACK IN THE GREEN.—This is sometimes regarded as the deposit of aphides; at other times as an extravasation of sap. Doubtless, both causes operate to cause appearances different in their nature, but which are classed together because of their resemblance as one and the same phenomenon. If honeydew is the exudation of aphides, then the trees must be treated so as to remove the flies from them. If the (so-called) honeydew is an extravasation of sap, a dressing of the ground with salt, or better still, a good watering, with a solution of salt, in the proportion of a quarter of a pound to every gallon of water, will put a stop to it altogether; the water to be applied only to the root.

SPOTTED GERANIUMS.—*Depliant.*—Your geraniums are afflicted with two complaints. Their leaves have been "burnt," perhaps through faults in the glass, perhaps through drops of water lying on them during bright sunshine, when every drop becomes a lens, and concentrates the rays of the sun to where it rests. They are also affected with "spot," an incurable disease. Your management has been bad, and you would do well to refer to the indexes of former volumes, and read over all that has been said on geranium culture. Your only course now is to take cuttings from the healthiest shoots, and root them in pots filled half full of drainage, and the rest peat and silver-sand in equal proportions. When rooted, put each into a small sixty-sized pot, in a compost of turfy loam and leaf-mould without dung, and with enough sand to render the stuff porous, according as the loam may be heavy or light. After that proceed to shut on, and grow them liberally without any check, and by careful stopping you will obtain good plants for next season. As for the old plants, cut them down and place them in a pit by themselves, and if they break with clean leaves you may remove them to the house, and give them a shift into *small pots*: if they show spot again, put them on the fire and annihilate them. After cutting down, give very little water to the roots, but occasionally sprinkle their tops.

STRAWBERRY PLANTATIONS.—*Jupiter.*—So potent a god takes interest, we presume, in such an earthly subject in consideration of the nectar that accompanies the fungivorous banquetings in which the poets inform us the divinity's delight. May it please your sublime majesty to hear that our respected contributor, Mr. Holland, gardener to R. W. Peake, Esq., of Spring Grove, Isleworth, has in his fine garden a piece of British Queen strawberry, planted in rows about eighteen inches apart, that have not been lifted or renewed for ten years, and they still bear well and grow luxuriantly. As soon as the fruit is off, Mr. Holland mows them over, removes the rooted runners from between the rows, and then top-dresses them with half rotten dung. We saw that piece in 1860; it was then nine years old from the first planting, and was bearing a splendid crop. Such a case, however, is an exception, but one worth recording. As a rule, strawberry plantations should be renewed every three years, and the best time is as soon as good rooted runners can be got, that is, during July and August. The ground should be trenched deeply, and a liberal dressing of manure well chopped over and dug in with it. If your divine majesty can obtain a little leisure in this peaceful season to put aside thunderbolts, and attend to the planting yourself, it will be found an agreeable change from the jealousies and rivalries with which the minor deities perplex your supreme intelligence, and something of an insight into the ways and wants

of ordinary mortals who tremble at your mighty judgments. While the Mussulman cries, "In the name of the prophet, figs!" we denizens of a chillier clime exclaim, "By Jupiter, a good strawberry is a dish for the gods."

CALCEOLARIAS DYING.—*J. A. P.*—We can at once guess, from your "inadequate description," the plant you wish to have named; it is *Gazania splendens*. It grows freely in any good soil, blooms profusely until stopped by frost, and plays no tricks, as the calceolarias do; therefore, it will, to a great extent, take the place of that old favourite as a yellow bedder. A great many conjectures have been made as to the cause of calceolarias dying off, but none of them are satisfactory. We will add another to the number, and our opinion is that the previous culture is the cause. We find that the sudden deaths occur almost exclusively among plants that were pot-bound before they were turned out; if this is the cause, the *rationale* is not hard to trace. A hard ball from a sixty-pot probably never gets thoroughly moistened from the day it is turned out, and at turning out there is generally so much to do that the calceolarias are planted in a hurry, instead of being well wetted and pressed up close when bedded. The sudden deaths have happened every dry season; in the best kept gardens as well as in the worst, except where the soil is peaty and damp, and in such places they have stood well. We have had two distinct sets of calceolarias under our eye this season; one lot was turned out of sixty-pots in the usual way, and a large proportion perished between the 10th and 20th of July. Another lot was struck last autumn in frames half filled with sweepings of peat, turf, very rotten dung, and the grit swept from garden paths. These were lifted out of their bed with large roots, and the plants had never touched a pot of any kind, and not one of them has failed yet; so therefore we deduce a practical lesson, and while profiting by it ourselves, wish our readers to do the same. The beds must match symmetrically; say, 1, *Annie geranium*; 2 and 4, *Mrs. Holford verberna*; 3 and 5, *Gazania splendens*; 6 and 8, *Tom Thumb* or *Crystal Palace geranium*, edged with blue lobelia; 7 and 9, *Purple King verberna*; 10 and 12, *Imperial Crimson geranium*; 11 and 13, *Magenta geranium*. Get the sorts in now, and propagate at once for next year. We do not undertake to plant beds; and if you do not like the planting when done, you must not lodge a complaint against us.

ROSES.—*Prior.*—Paul Ricaut is a hybrid Bourbon summer rose; it blooms but once, and is then done for the season. Though a first-class rose a few years since, it is now third-rate, owing to the great improvement effected in the class of continuous bloomers. It is a capital rose for exhibition at the end of June or early in July. The entry in the list you refer to is a mistake. *Triomphe de Rennes* is a free-growing Noisette in a sheltered position, but it will not run up with such speed as most others of its class. *H. P. Triomphe de Paris* and *Maria Portiere* are likely to do well with you, but *Count Bobrinsky* will lose character, and bother you with mildew. *Gloire de Santheay*, *Eugene Appert*, and *Victor Verdier*, will be amongst the best of all roses for town, and the best also for any place where good roses are esteemed. We should not advise you to use any of them as climbers. Take *Jules Margottin*, or some of the most robust of the Noisettes, and you will be more sure of accomplishing your object. Further notes will be acceptable. Why you cannot do the General we are puzzled to understand, but you are not the only complainant against his carmine excellency.

EVERGREENS CUT DOWN BY THE WINTER.—

M. P.—We advised the removal of unsightly shrubs to the reserve ground, and we adopted that plan ourselves, and have now at command a good supply of shoots for propagation. Even myrtles, which appeared to be extinct, have made good growth from the roots, and *Euonymus* the same. You will find an article by Mr. Howlett, at page 208 of the *FLORAL WORLD* for 1859, which will teach you how to turn these summer shoots to account, to get up a new stock of shrubs. Almost any of our hardy evergreens will strike from cuttings of this summer's growth, if planted in a sandy soil in a shady place. The compost shaken out of old pots is capital stuff to propagate hardy shrubs in, if turned two or three times to sweeten it, and then made up into a bed in a position rather shaded or in frames and pits. Hollies may be propagated from cuttings now, in sandy soil on a north border, under hand-lights. Leave the *Cedrus deodara* alone till October, then lift it, trim it up, and plant in fresh loamy soil. It will do well in a north aspect, if raised above the level, but not if the position is damp.

ORCHARD HOUSE.—*C. E., East Sheen.*—There is no objection to lowering the level if the position is dry. On a well-drained soil a more equable temperature is obtained by lowering the site of a house, but in a damp position that advantage would be nullified by the injury resulting from stagnant moisture during winter. We do not like the double hip of your diagram. We would make it a span, and contract the width. If you consult the *FLORAL WORLD* you will find an abundance of plans and dimensions, from which you can select to work from. See the Nos. for January, February, and May, 1855; February, April, September, and October, 1860.

FLOWERING SHRUBS.—*H. R. H.*—The following are free-growing deciduous kinds in high esteem:—*Weigelia rosea*, pink, May; *Althæa frutex*, various, Septmber; *Euonymus Europæus*, red berries in autumn; *Ulex Europæus*, fl. pl. yellow, spring; *Viburnum opulus*, white, May; *Chimonanthus fragrans*, white, Feb.; *Cydonia Japonica*, this makes a capital flowering shrub; *Forsythia viridissima*, yellow, March; *Rhus cotinus*; *Ribes atrosanguineum*, fl. pl. crimson, May. You might select, purchase, and plant at once, or select now while the shrubs are in full foliage, and plant in October.

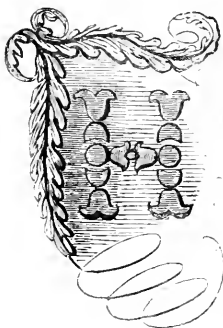
STRAWBERRY RUNNERS.—*V.*—The removal of these must depend upon circumstances. If the plantation is old, it should be renewed by destroying the old plants, and trenching and manuring the ground, and planting in their place the plumpest and best rooted of the runners. If the plantation is young and vigorous, and no increase of stock is wanted, the runners may be removed, and their removal will strengthen the bearing plants. Those who tell you that removal of runners will prevent bearing next year, talk nonsense.

LIGURIAN BEE—BLACK BEE.—It has yet to be proved if these are in any respects superior as to hardiness and honey-making to our old friend *Apis mellifica*; that is to say, it has to be proved in this country. As to their habits, they differ but little from the common honey-bee, and their value is at present a matter for inquiry and experiment. Though we have assisted in their introduction to this country, it was simply in the interests of science, not from any deep conviction of their superiority.

VARIOUS.—*Alpha.*—Build the new pit to face the north, it will thus be doubly useful, as you have one in a south aspect already.—*Brentingly Cottage.*—Received safely, thanks.

THE
FLORAL WORLD
AND
GARDEN GUIDE.

SEPTEMBER, 1861.



HARDY BULBS and early-flowering annuals are generally thought of a day too late. The ground is cleared of the plants that have kept it gay since June, the borders are cleaned and manured, and then hyacinths and tulips claim a little attention, but are rarely all planted till late in November, and sometimes, even, are delayed till near Christmas. By that time, they have made a considerable amount of growth, and there has been an exhaustive evaporation from the bulbs ever since the sap began to move: two circumstances very detrimental, because exhaustive.

That they bloom well afterwards is often true, but not surprising. The blooms were already in the bulbs when they were purchased; the Dutch growers have dealt with them so as to make sure of sending them stout and lusty to the English market. But these bulbs are afterwards found to be of no value, and thence arises the complaint against bulbs of all kinds, as expensive, because they must be annually renewed by the process of repurchasing. But there is nothing in the constitutional nature of the hardy bulbs that make so gay a show in spring to interfere with their preservation from year to year; their increase, at the same time, by offsets, and their positive improvement instead of deterioration; but whoever will do justice to them, in a horticultural sense, must begin the process now; it will not bear delay, for delay is one of the essential features in the process of destruction, against which we now make a protest.

As soon as any bulb shows signs of growth, the sap has begun its seasonal movements, and it needs the support of nutriment obtained by the roots. Therefore, the first act of the sap, when its autumnal movement commences, should be the formation of roots; therefore, also, it should be in contact with moist earth, before the movement of the sap commences, in order that when the roots begin to protrude from the base of the bulb, they may be in contact with the soil, which is the only

natural medium for their growth and usefulness. What should we say of a propagator of roses who should put in cuttings, and at once drive them into growth by atmospheric heat and moisture, without waiting till they had callused and began to form root fibres? We should say he had adopted a killing process, and had better buy roses ready rooted than attempt to obtain them in such a ridiculous fashion. But this is the way the greater part of autumn planted bulbs are dealt with. They arrive in this country in fine condition of ripeness, and begin to sprout in the warehouses and seedsman's windows, long before the public think of making purchases. They form incipient roots at the base, and plump green shoots at the crown, and these succulent growths are elaborated at expense of the sap in the bulb, and, by the process of transpiration, the atmosphere sucks the life out of them, through the tissues of incipient roots and plump green shoots. When planted, they have to make roots at the expense of the already exhausted bulb, and then have to recover from those roots sap to sustain the growth above the bulb, which is already in advance of the roots in its stage of development, and thus, the balance between supply below and exhaustion above is never restored, and the second season after purchase the bulbs are fit only for the muck-heap.

The laws of vegetable physiology plainly point out that all the hardy bulbs which sprout in autumn should be in the ground before that effort is begun. The equable temperature of the soil, and its moist condition at six inches below the surface, provide the very best conditions possible for promoting immediate root-action, and retarding the growth of the foliage, two desirable results both for the bloom in the spring following, and for the preservation and increase of the stock. But the bedding system stops the way: such is the verdict of the gardeners. Nothing of the sort; here are materials for enlarging the resources of the bedding system; here are materials towards keeping up the gaiety of the scene all the year round; and that, after all, is the end at which the bedding system aims, though it is one it may never attain to. The excuse for procrastinating the purchase and planting of bulbs is, that until the bedders are off there is no room for them, and as there is a good deal to do in nursing the bedders, and getting all in order for the winter, the bulbs are left to eat themselves up in the seed shops, and every year the purchase must be made anew. Observation and experience alike teach the possibility of preserving bulbs from year to year with the same certainty as geraniums and fuchsias, and in the interest of our readers we commend to them the proposal to purchase once and adone with it, except for continually improving and enlarging the collections.

In our report of the exhibition at the Wellington Nursery in the **FLORAL WORLD** of May last, we remarked that the process adopted there in the management of early tulips was one eminently profitable, as well as florally effective. That same process is applicable to bulbs of all kinds that are to be used in beds and borders in the open ground for spring decoration, and every one of the details included in it must be observed to the letter, or the result cannot be realized.

Instead of waiting till the bedders are removed, the whole of the bulbs intended to be used out of doors, and in pots, should be obtained and started into growth at once, say, for the sake of precision, in the first or second week of September. By early purchases the bulbs are obtained

in a dormant state, and those who come first are best served. The ground they are to occupy need not be disturbed. Make up a bed in the reserve ground, or, better still, in a cold pit with a north aspect. The bed should be on a hard bottom, well drained, and should consist of leaf-mould, rotten dung, and sharp sand in equal proportions. Sand may, indeed, be used almost *ad libitum*. The Dutch grounds are very sandy, very moist, and are regularly enriched with decomposed manures. If the bulbs are to be finally planted in clumps, arrange them in clumps in the preparatory bed, tally them that no mistake may happen, plant them on three inches of the mixture, and cover with three or four inches more. Give one good watering, and leave them to their fate. Early tulips, hyacinths, crocuses, snowdrops, may all be treated in the same way. As soon as the ground on which they are to be bloomed can be got clear, trench it over, and dress it with a liberal allowance of sharp sand and rotten dung. Lift the bulbs in clumps from the preparatory bed with as little disturbance or injury of the roots as possible. Plant them in their places in whatever arrangement has been determined on, and cover them at least five inches deep. If a mulching of old dung two inches deep will not be objectionable in its appearance, adopt it, and a fine bloom will be the result, and after they bloom the bulbs will grow vigorously, and form germinal blossoms for the next season. This is a very simple process, but it may make all the difference between an annual and heavy outlay, and the possession of a permanent stock with a certainty of increase at a single cost in the first instance. Instead of being exhaustive, as the procrastinating process must be, it is strengthening and promotive of the formation of offsets; even the check given by lifting is good, by preventing the protrusion of the stems until severe frosts are pretty well over in the spring.

But what of the management when the bloom is over? That is simply a continuance of the same process in inverse order. The bulbs may be lifted at any time if care be taken not to break the roots or shake off the soil, and, fortunately, there is nothing lifts better than a hyacinth or tulip if in sandy, well-manured soil. Thousands may be taken up without the destruction of a dozen inches of roots if small-tined forks are used, and a time chosen when the ground is reasonably moist, and the weather damp and cool. Let them be removed to the same reserve ground, be laid in shallow trenches, and covered with the same depth of loose sandy stuff as they were in when blooming. They will there finish their growth completely, and should remain undisturbed till the leaves have faded, when they may be dried off and stowed away till September comes again. As to potted bulbs, they should be set to work equally early, and according to the date at which they are wanted in bloom, be encouraged or retarded by suitable temperatures. Those wanted latest should be kept in the pit as long as possible, and the more slowly they grow the better for their bloom at last, and their subsequent preservation. The main point in all the details of culture is to guard against haste, either in forcing bulbs into bloom or in compelling them to ripen off after blooming by withholding water. In their later stages they should have abundance; if in rich soil, well drained, they can hardly have too much for three or four weeks after blooming, but as soon as the foliage shows signs of decay water should be withheld, the sun should play with all its force upon them, and the ripening should be completed without exposing the bulbs to the atmosphere until the foliage has utterly withered.

As to hyacinths flowered in water, or forced in pots, or otherwise rendered of no use for at least one season afterwards, they will always pay for recovery, and the process is not difficult. Plant all these weakened bulbs in a deep, sandy, well-manured border in September, six inches deep. If they throw up flower-spikes the next spring, nip the spikes out, with the exception of one or two blooms. Allow these blooms to expand to prove them, and while the blooms are open tally them correctly. If sure of the names beforehand there is no need to allow any blooms to remain, which is the preferable method. Give plenty of water during April, May, and the first week in June, then withhold it altogether, and when the foliage has withered take them up, and they will be found to have acquired a size and character equal to the best of the imported bulbs of Dutch growth. Thus, when tried most severely, they may be recovered by sacrificing the bloom one season, and, when thoroughly well dealt with from beginning to end, the sorts need only be purchased once, and after that they may be kept and increased with the utmost certainty. To use bulbs extensively for out-door decoration is an expensive undertaking, and we need not apologize, therefore, for dealing with the matter now at rather more than ordinary length.

NOTES OF THE MONTH.

ROYAL BELFAST HORTICULTURAL SOCIETY.—SUMMER EXHIBITION.—Friday, the 9th of August, was a day of special rejoicing in Belfast; three important events concurring to cause an immense assemblage and a considerable amount of healthy excitement. It was the day fixed for the exhibition of the Belfast Horticultural Society, and the collection of plants, flowers, and fruits, was such as distanced all former exhibitions in excellence of character, completeness of detail, and general grandeur. The day was further distinguished as the visit of the Lord Lieutenant and suite to Belfast, which added much to the attractions of the show. Lastly, the local interest was enhanced by the performance of a ceremony eminently complimentary to the people of Belfast; the Mayor, E. Coey, Esq., was knighted by the Lord Lieutenant in the Royal Botanic Gardens.

In regard to the exhibition, it was the best ever seen in these gardens. Stove and greenhouse plants were excellent, beyond the usual average description. The prizes were to be given for the best collection of twenty-four plants, etc., and the greatest novice entering such a show-yard, and one possessed of the least experienced eye, would at one look see the beauty of the admirable collection belonging to his Excellency the Lord Lieutenant, and the superiority of the same over all their competitors. They were awarded the first prize; and next in order came the collection of Mr. G. A. Thomson, which, were it not that his Excellency exhibited, would undoubtedly have won the first prize; Mr. Thomas Sinclair and Mrs. Boomer were awarded the third and fourth prizes. There was a fine collection of foliage plants, from P. F. R. Richardson, Esq., among which we noticed *Alocasia metallica*, *Cyanophyllum magnificum*, *Aralia Sieboldii*, and *Cissus discolor*, all admirably grown, the first being especially deserving of notice as a novelty unequalled in its metallic-looking foliage. Another metallic plant is *Clerodendron judicum*, shown in the same collection; the leaves have the appearance of being exquisitely finished in bronze, certainly a remarkable object. Lord Lurgan also exhibited an *Alocasia*. A large number of rare begonias were exhibited by John Moat, Esq., Dunmurry. It would be almost impossible to find ten begonias to equal them in any part of the country. Mr. Moat had also a

good collection of exotic ferns, which were much admired. The largest collection of exotic ferns was one belonging to Mr. P. F. Richardson, which was deservedly awarded the first prize, the second being given to Mr. Gordon A. Thomson, Bedeque House. Mr. Thos. Sinclair had also a very neat collection. There was an exceedingly large collection of British ferns sent for exhibition by Messrs. A. Stansfield and Son, of Todmorden, Lancashire. These comprised some one hundred distinct varieties, all of which were greatly admired. The prize, however, in this class of plants was awarded to a young amateur, Mr. W. H. Phillips, of Alfred Street and Bridge Street. A finer collection could scarcely be found. Mr. P. F. Richardson also exhibited in this class of plants, and took a second prize; Thomas Malcolmson, Esq., of Fairview, and Wm. Verner, Esq., were awarded a third prize each. One of the greatest varieties in the entire exhibition, and a collection which attracted very considerable attention, was a box of cut blooms of orchids, sent over by Mr. B. S. Williams, of Paradise Nursery, Holloway, London. The box contained about a dozen different varieties, such as were never previously exhibited in Belfast. They included:—*Cypripedium barbatum superbum*; *Cypripedium grandiflora*; *Cypripedium barbatum tigrinum*; *Cattleya crispa*; *Cattleya Loddegesii*; *Cattleya Harrisonii*; *Dendrobium tortile*; *Miltonia Regnelli*; *Miltonia bicolor*; *Miltonia spectabilis*; *Vanda insignis*. These were the subject of general and deserved commendation. For pelargoniums Mr. McCormick, M.P., was awarded the first prize, and Mrs. Boomer the second. Fuchsias were exhibited by Mr. Thos. Sinclair, J. P., and Mr. G. A. Thomson. Amongst them were Rose of Castile and Wiltshire Lass. The cut roses were, on the whole, very beautiful collections; but that of Mr. Lennox T. Davies, Ogle's Grove Nursery, Hillsborough, undoubtedly surpassed all the others in variety. Mr. Clelland, of Downpatrick also exhibited a good collection. In collections of six hand bouquets Mrs. Boomer carried off the prize, and the value set on these bouquets may be judged of from the fact that, at the close of the show, they were sold at so high a price as two shillings and sixpence each, for purposes of presentation to ladies going to the ball. The quantity of fruit forwarded to the show proved how abundant the yield of such must be throughout the country this year. The first prize was carried away by an exhibitor from a distance, Mr. Patrick Kirby, of Dublin; while Mr. Sinclair, Mr. Macroy, and Mr. W. S. Crawford were awarded the second, third, and fourth prizes respectively. Mr. Pilson, of Downpatrick, exhibited some apples—"the Winter Strawberry"—grown in the years 1859, 1860, 1861, three of each year's growth. They were grown by Nelson Bullick, Esq., of Aghalee, near Lurgan, and were made a present to C. Pilson, Esq., Downpatrick, and exhibited by him. There was an exceedingly large collection of vegetables, and all of them were first-class. The first prize was awarded to Mr. A. J. Macroy, the second to Mr. W. S. Crawford, and the third to Mrs. Boomer.

ROYAL HORTICULTURAL SOCIETY.—Among the subjects of special interest lately submitted to the Floral and Fruit Committees, we have noted the following as worthy of mention, and likely to be useful to our readers. **STOVE PLANTS.**—*Campylobotrys refulgens*, from Mr. W. Bull, Chelsea. Native of Chiapa, Mexico; dwarf habit, large opposite obovate sessile leaves, tapered below, having a satiny lustre on the surface, which is dull olive green, with whitish depressed nerves and ribs; F. C. C. *Rudgea leucocephala*, from Messrs. E. G. Henderson, St. John's Wood. Large magnolia-like leaves, terminal heads of closely crowded white flowers, which have a long slender tube and five spreading segments. A striking object, but rather spare in the production of flowers. *Bougainvillea speciosa*, from Mr. Daniels. This charming plant has obtained for Mr. Daniels a special certificate for the skill with which he produces abundance of its rosy-purple floral bracts, by the system of culture described at pp. 134, 175 of the third volume of the **FLORAL WORLD**. *Adelaster albivensis*, from Messrs. Veitch. A hand-

some variegated-leaved plant of climbing habit, with smooth round stems, and opposite stalked leaves, which are ovate-acuminate and tapered below, and eventually grow to a large size. Colour deep olive green, traversed by white veins. It is very ornamental. Commended. *Prenanthes arborea*, from Mr. Weeks. A native of the Canary Islands. Leaves pinnate with narrow distant leaflets. Very elegant and striking when grouped with other plants. Commended. Variegated *Begonias*, from Mr. Veitch; *Schilleri*, dwarf habit, silvery leaves, the leaves having a small central green star and a narrow speckled green edge: from Mr. Bull, Count Alfred de Limminghe, olive-green ground, centre and margin covered with uniform silvery dots, the rest of the surface forming a clear silvery zone; *Madame Guntzberger*, angular-lobed olive-green leaves dotted with spots of white; *Charles Eicke*, angular-toothed leaves, dark purplish-red centre, narrow edge of same colour, intervening space of bright green, marked with silvery dots; *Duchess de Brabant*, dark brownish centre, silver and green zones, and brownish edge; *Mine d'Argent*, small-growing, almost wholly silvered red beneath; *Fortuni*, centre brownish-red, even edge of same colour, rest of the surface velvety green, no white: from Mr. D. T. Fish, gardener to Lady Cullum; *Lady Cullum*, small and neat leaf with a tapering central dark-green ray, and a Vandyked dark-green border marked with silvery dots, the intermediate space forming a broad silvery zone: from Mr. Bull; *Keramis*, leaves of moderate size, angulately-lobed, surface dull silvery gray, green centre. NEW FERNS.—*Lomaria cycadifolia*, from Messrs. Lee; a fine evergreen hardy fern, forming a thick root-stock, from which rise a profusion of pinnate fronds. The stem is sometimes three feet high, and it will probably prove of the greatest value as a tree fern of very hardy habit; F. C. C. *Lomaria fluviatilis*, from the same; a New Zealand species, of elegant habit, fronds membranous, narrow and elongated, pinnae blunt elliptic, waxy on the margin; F. C. C. *Polystichium vestitum*, var. *venustum*, from the same; a New Zealand fern of great beauty, dark-green bipinnate fronds, pinnae small trapeziform, deeply and acutely lobed and toothed; F. C. C. *Pteris rubronervia*, from Mr. Bull; a handsome bicoloured fern, bearing some resemblance to others of the coloured *Pterids* now so generally in cultivation. *Todea superba*, from Messrs. Veitch; one of the most beautiful of its race; fronds nine inches long, spreading, and gracefully arching, pinnae crowded, cut into narrow segments, which turn upwards, and bristle all over the surface; F. C. C. *Lomaria Fraseri*, from Mr. Standish, Bagshot; a fine New Zealand fern, has the habit of a tree fern; F. C. C. *Hypolepis distans*, from Mr. Dean, Bradford; an elegant greenhouse basket fern, furnished with creeping rhizome and smooth slender ovate-lanceolate bipinnate fronds, a foot or more in length, and of drooping habit. GREENHOUSE PLANTS.—*Epacris vesta*, from Messrs. Veitch, white tube tipped with pink, growth erect, and free-blooming habit; commended. *Erica Mediterranea alba*, from Mr. Bull, a dwarf bushy heath, probably hardy, forms a dense tuft eight inches high, and bearing an abundance of white flowers. *Pultenaea cuneata*, from Messrs. Veitch, a free-flowering species, flowers large, orange yellow with brownish keel; a handsome acquisition. *Erica Imperatrix*, from Messrs. Veitch, one of the late Mr. Storey's seedlings, of the *aristata* section; large flesh-coloured flowers deeply coloured at the throat, limb segments large, bluish white. *Pimelea elegans*, from Messrs. Veitch, an elegant greenhouse shrub, with large ovate-lanceolate leaves and globular heads of white flowers; F. C. C. *Osmanthus aquifolius variegatus nanus*, from Mr. Standish, a neat oleaceous shrub, with holly-like leaves, margined and marbled with creamy white, habit dwarf and growth twiggy; F. C. C. *Gardenia radicans fol. variegatis*, from Mr. Standish; differing from the species, in having leaves edged with white, a most beautiful greenhouse shrub.

STOKE CHRYSANTHEMUM SOCIETY, Aug. 15.—The summer exhibition of

this society was held in a large marquee in Devonport Park, under the patronage of the Earl of St. Germans, Earl Morley, Sir Thomas Pasley, Bart., and other persons of influence in the locality. The weather was fine, and there was a large attendance. Collections, not for competition, were exhibited by W. H. P. Carew, Esq.; W. C. Hodge, Esq.; J. Ross, Esq.; J. H. Wilson, Esq.; and Mr. J. Roberts. Achimenes, begonias, and fruit were unusually good. Mr. C. Brighton, gardener at Mount Edgecumbe, showed some splendid grapes; Mr. Prout, engineer at the dockyard, had some excellent dishes of plums and pears. In asters and dahlias, the amateurs outshone the gardeners. Two very showy "hearthrug" designs in cut flowers were exhibited.

BAMPTON, Aug. 16.—By the courtesy of Mrs. Southby, the same site was used for the show as last year, and the greatest success attended it. There was a tea party and a dance to make the affair thoroughly social as a local gathering, and the Rev. D. Adams, acted as medium of communication between the promoters of the show and the visitors assembled, by means of an appropriate address.

SHEPTON MALLET AND EAST SOMERSET, Aug. 20.—The Sheptonians made extensive preparations for this their second exhibition of the season, and the neighbouring towns sent visitors in abundance by special and excursion trains. The town was decorated from one end to the other with arches of evergreens, flags, floral medallions, and other devices appropriate to the occasion. The ground was lent for the purpose by W. C. Walker, and W. Hockey, Esqrs., and there were five tents appropriated to the products of the horticultural skill of the district. There were 260 exhibitors and 1500 entries; a proof of the prosperity of the society as representative of a very favourable locality. In addition to the usual features of a schedule, prizes were given for the best cultivated gardens in each of the parishes of the district, and also prizes for wild flowers, and to cottagers who had obtained the largest amount of money for prizes. Among the novelties were four seedling dahlias exhibited by Mr. Keynes of Salisbury, for which a certificate was awarded. They were named respectively Anna Keynes, Donald Beaton, Mrs. Crisp, and Miss Carter. A full report and list of prizes was published in the current issue of the *Bath Chronicle*, to which we refer for further particulars.

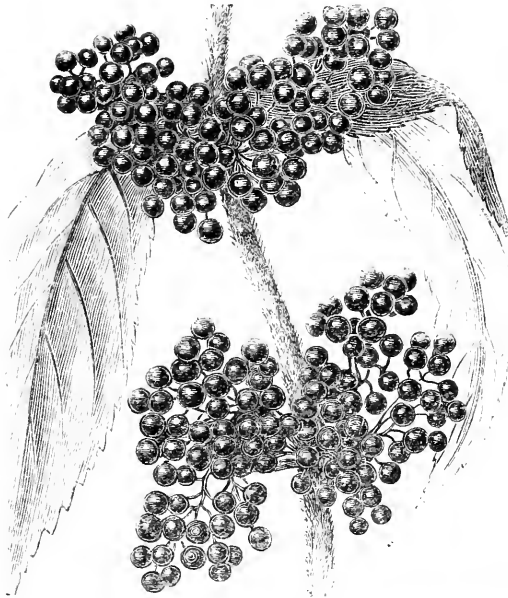
TROUBRIDGE, Aug. 28.—The twelfth annual exhibition took place in a field adjoining the railway station, and an immense variety of amusements was added to the attractions of the show.

THE HORTICULTURAL BITE.

THE effect of the bite [a love of horticulture] does not appear till the decline of life—not that the mental and nervous energy are then expended, but a more quiescent state is superinduced in accommodation to the weakness of the bones and muscles. From all the cases, however, that have come under my observation, I can truly say that this decline has been put off to a far greater distance from those who have submitted to the bite, and the increased activity which it communicates, than from such as, preferring a mere torpid state of existence, have treated their nervous system with punch, and pipes, and morning slumbers, and strong tea. I am not philosopher enough to tell why a machine that has so many joinings, levers, pulleys, and pivots, should last longer by constant and even rapid motion than by

lying a good deal idle—unless it be that rust consumes faster than labour wears; but, like other vendors of specifics, I rest chiefly on the facts of the case, and to these I can confidently refer. I have further observed, as to the effect of the infusion by the bite, that it stimulates the brain gently, increases the circulation, and determines to the surface—that it gives to the head a great turn for quick inventions, and fills the heart with kindly feelings. In short, I have never discovered anything of a rabid tendency in its effects on those who have been bit, except a strong propensity to bite others. And as to its operation on your tastes and pursuits, it will inspire a love of your garden, and as strong an antipathy to that of the sluggard as another sort of bite gives to the sight of water. BOB.

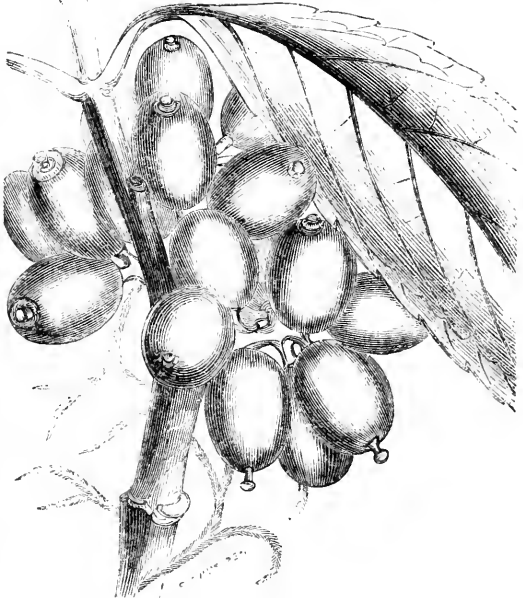
NEW BERRY-BEARING SHRUBS.



CALLIARPIA PURPURATA.

AUCUBA HIMALAICA.— Respecting our old garden friend, the *Aucuba Japonica*, or Spotted Laurel, there are several interesting points not generally known. In the first place, it is a true variegated plant, that is to say, in its natural form, it has green leaves, and our blotched leaved kind is a garden variety obtained from Japan. On the 11th of June last, plants of the original, or green-leaved form, were exhibited before the Floral Committee of the Horticultural Society, and this brings us to another point, viz., that when these green-leaved plants were shown, the female plants had berries on them which our garden *Aucubas* never produce. The reason of this barrenness is, that we possess only male plants, female plants have never been imported until Mr. Standish, of Bagshot, secured it in 1861, through the good offices of Mr. Fortune.

The plants exhibited bore oblong-ovate berries, about the size of the pomes of *Crateægas*, and of a bright orange colour. These remarks occur to us in introducing a new species, *Aucuba Himalaica*, which is here figured. Here we have the female form of an *Aucuba*, quite distinct from our old *Japonica*; but *Japonica* will, probably, be useful to fertilize its blossoms, for it flowers freely in early spring, in all our gardens, and few people ever take notice of its blossoms. *Aucuba Himalaica* may for the present be considered a cool greenhouse shrub. It will, probably, prove hardy, for our old "spotted laurel" (which is no laurel) was at first grown in the stove, then in the greenhouse, and at last proved capable of enduring all the changes of our climate. This new plant is



AUCUBA HIMALAICA.

not yet, so far as we know, to be obtained through the trade, but will, no doubt, be offered in the course of a year or two.

CALLICARPA PURPUREA.—This beautiful shrub has been frequently referred to in our reports of exhibitions and meetings of the

Horticultural Society. It grows freely, and is at all seasons a bold and handsome shrub. The blossoms are succeeded by close clusters of rich violet-purple berries, which it retains during the whole of the winter. Ordinary green-house treatment will suit it admirably. [Price 2s. 6d. to 5s.]

THE CULTIVATION OF TEA CHINA ROSES.

HAVING seen in print, and often heard the fact remarked that this description of rose rarely succeeds if grown in the open borders of gardens near London, perhaps a few remarks deduced from experience might prove interesting, more especially respecting this particular family; for it is admitted by every one that no collection of roses, however small, can be complete without them; their general appearance being so distinct, and adding to this their delicate and tinted colours, the beauty of their foliage, and peculiar scent, renders them objects of special admiration to all who see them.

About three years ago, I, for the first time, procured several of these roses, and planted them in a south border in ordinary soil, tolerably well manured, but they grew poorly and made only a few blooms, and certainly did not repay the trouble they had cost, and moreover the ground would have been better occupied in growing verbenas or other bedding plants, and by most people to whom I mentioned my disappointment, I was told that the suburban atmosphere was not sufficiently pure to allow of the growth of these roses. But determined not to abandon their cultivation without a further trial, I removed them in the autumn into a much richer soil; but in spite of carefully protecting them from severe frost, I lost about half during the winter; those, however, which survived, grew and bloomed beautifully through the summer and autumn, and which tended to show that soil and treatment had more influence than the slightly impure atmosphere, and encouraged by this partial success, I determined, if possible, to render it more general in the following season; and being convinced that damp was the cause of so many dying in winter, I saw that it was essential to provide drainage.

As my garden is not naturally drained, nor is it exactly practical to do so artificially, I therefore adopted the following plan to effect that object upon that part where I intended to plant these roses, by taking away the earth entirely to the depth of about twelve or thirteen inches, and then filling up two or three inches with stones or

other rubbish, and placing a little moss or straw above to prevent the earth mixing with the drainage, and which I find answers every purpose, except during the heavy winter rains, when the water cannot pass off quickly enough below the drainage and to rectify this I dig early in the autumn a deep trench at the end of the border, into which the water runs, and which might otherwise lie stagnant amongst the soil and stones, and but for this precaution all the pains taken might be rendered nugatory.

Having said so much about drainage, if not too tedious, I will now proceed to describe the soils and their proportions which I used to carry out my experiment. I divided the space of ground above described into four parts, and filled up the first with equal portions of earth I had taken out, and manure (remains of an old hotbed); the second with two-thirds of common meadow turf and one-third manure; the third with manure entirely, as recommended by Mr. Rivers in his last year's catalogue; and the fourth, having exhausted all the manure, I used instead scalded sphagnum about one-third, turfy peat, one-third, and one-third of ordinary soil; and in each case I have been fully remunerated for the trouble taken by the vigorous growth maintained, the abundance and constant succession of bloom, and the beauty of the individual flowers; and although in each of the soils tried the result was satisfactory, I will just mention the differences observable between them. In the first-named soil the growth was vigorous, and blooms good and abundant, and the plants but slightly cut by frost in winter. In the second the growth was more vigorous, and the blooms finer than the first, and not more than a few twigs killed by frost. In the third, the growth was exuberant, and the foliage magnificent, but the blooms were not so abundant as in the preceding cases, and sometimes singular abortions or sports were produced—affording strong evidence of the validity of the theory of morphology. They, however, had so strong a disposition to grow during the mild rainy seasons in autumn and

winter, that some were much injured by the frost, and others quite killed; and the fourth, the result was similar to the first, with the exception of being a little more injured in winter.

It will, therefore, be seen, all points being considered, that in the case where two-thirds turf and one-third manure was used, the roses succeeded best, the cause of which appears to me quite obvious, in the fact of the requirements of the plants being better supplied in this soil than in the others, viz., free access to the roots of atmospheric air, and being a soil that would not bind, the roots meet with no check in their progress, and nourishment is supplied through the most advantageous medium, and from the best source, the soil never containing more moisture than it holds by capillary attraction.

I must, however, just advert to protection during winter, respecting which I can only give the result of two years' experience, having both seasons' tried about equal numbers by protecting the roots of some with moss about six inches thick, as recommended in Mr. Rivers' catalogue, and others by laying branches of evergreens or fern over them, while others have not received further protection than merely placing sawdust or cinder-ashes about an inch thick over the roots, and although the roses to which the latter method was adopted appeared to have suffered most from frost, they, in reality, were the least injured, which was clearly proved in the ensuing summer by their growth being upon the whole more vigorous than the others, particularly the bottom shoots and suckers. I account for this latter plan proving best, from the circumstance of the two former harbouring too much damp, which is more destructive to the roots than moderate frost.

The aspect in which these roses are grown to the best advantage appears to depend entirely upon the season. If placed

facing the south (being so excitable), they are more apt to grow during warm winters and early springs, and which renders them liable to be cut off by frosts; in such a case the south is a bad aspect, but if, on the contrary, the winter is cold, there cannot be a better. For average seasons, however, I think against or near a west wall is the best situation, as it is to a great extent protected from the north-easterly winds, and catches but little of the early spring sun, and when they do, it is not till late in the day, so that, should a frost have occurred in the night, the thaw will necessarily be more gradual than in a southerly or easterly situation, an item to which too much attention cannot be paid.

These roses seem to receive great benefit from the application occasionally of weak guano water. I have also tried superphosphate of lime, but upon these soft-wooded sorts it does not appear to have much or any effect, although on the hard-wooded kinds it may be most beneficially used.

These roses are often grown to great advantage, budded either on the wild briar or the Boursault, for although they are sometimes liable to failure, still, when they do succeed, they prove very beautiful.

For pot-culture, the tea China roses cannot be too strongly recommended, as they are so grown with the greatest ease to perfection, taking care that the soil used is rich and open (turfy), and that good drainage be provided. Indeed, I think many of the more delicate weak-growing varieties, such as *Elisa Sauvage*, etc., are suitable only for pots, as in the open borders they are often subject to failure. The comparatively hardy and vigorous varieties, such as *Devoniensis*, *Compte de Paris*, *Josephine Malton*, *Bougère*, etc., cannot be too numerously cultivated or too strongly recommended for growing in beds or otherwise, more particularly the first-named one.

DEVONIENSIS in *Gardener's Chronicle*.

ON GRAY-EDGED AND SELF AURICULAS.

RESPECTING the gray-edged section of auriculas, though a very interesting one, it need not occupy a whole paper, and therefore I shall take it and the selfs together. As far as I can discover from old gardening books, the gray edge seems to be the first form of deviation from the simplicity of the wild species, and to have arisen from the force of cultivation acting upon the habit of the plant to exude a meal

upon the thinner parts of its external surface. Colour seems to have a tendency to prevent the formation of this meal. The original species appear to exist in two varieties, the yellow and the coloured, for travellers in its Alpine home have mentioned meeting with both these forms. Choice auriculas cultivated in pots, and much prized, I find notices of nearly 150 years ago; but the habit of naming varieties

appears not to have been in common use then, though probably it existed. The first-named variety I have met with, Grimes' Privateer, is still cultivated, and is usually among those that get a prize at Middleton, having been preferred in a judgment of "points" or "properties" (very unsoundly as I think) to Lancashire, when the latter was shown by Robert Lancashire as a seedling in 1846.

Even in 1827, when I first made acquaintance with this florists' flower, at the nursery of a grower in Sunbury, who commonly carried off the cup at the London shows, the green-edged section were included in this class, and only separated by their position in it, like the wranglers and senior optimes of the early Cambridge triposes. The separation of the two classes, though in particular specimens more fanciful than real, and therefore more often objected to, is a sound one, and, no doubt, will henceforth maintain its place.

But why is it that this older class is in every dealer's catalogue the less numerous? And why is it, seeing it is the less perfect form, that the highest-priced flowers are almost always found in it, and that the average prices are higher than in any other section? These facts at first sight seem out of due order, and yet when examined they admit of a fair explanation. Being the oldest and first-formed class, it has had more time to evolve its perfection, and the best specimens of the cultivated auricula ought to be looked for in it; and consequently inferior novelties would be less tolerated. Besides which there will be a tendency in raisers to look for green-edged seedlings as the higher form, and to thrust up into that class productions that as grays would not be worth notice. I know of no doubtful edge except Lancashire in which this is not conspicuous. Lancashire might have been called a green edge; it is more so than Sir John Moore. But it is too intrinsically excellent to hide its only imperfection by a device.

Nevertheless, it is by no means easy to find a score—is it to find a dozen?—first-class flowers, even in this section. Lancashire, if you can get the edge gray, would rank first in properties, first, indeed, of all auriculas. Maria, in every case, will be first in beauty. This year with me it was second to none in any respect. The colour I find, by careful comparison, is pure violet; but either from its substance, or transparency, from reflection, or from some other cause, its tint seems to differ from every other in the floral world, and to be superior to them all. I hardly know how imagination could paint anything more exquisite

than my plant was this year, and I only regret it was not in bloom early enough to exhibit in London. What is to come next? Mr Lightbody will have it his namesake ought to be placed before these two. Perhaps I might accede to its standing next to them. What then? None to be named singly. But there are many that come behind in a rank, and very respectably up too; Dickson's Duke of Cambridge, when it has an edge not swallowed up into the body colour; Sophia, the same; Dixon's Lady Jane Grey; Fletcher's Mary Ann and Ne plus ultra; Lightbody's R. Heady and Sir C. Napier; Dickson's Unique, when large enough; Maclean's Unique, always. After these come Smith's Bolivar and Captain Barclay, Heady's Superb, Sykes' Complete, Waterhouse's Conqueror of Europe. Then, at a respectful distance, but still not distanced, Barlow's Morning Star, Grimes' Privateer, Heady's Stapelford Hero, Hedges' Britannia, Kent's Victoria, Pearson's Badajoz, Warris' Union, Willmer's Squire Chilman, Beeston's Fair Flora, Buckley's Surprise, Holland's Village Bride. Bone's Perfection I know not where to place, as I have never seen it in character. There are a few others equal to these last, but not many, and I do not grow them. It is in this class you see the largest proportion of varieties with broad and flattened lobes or petals, making a bold and circular pip, and with pure edges, and therefore it must be deemed to have made the nearest approach towards its perfection, although its three best specimens are all of very recent date.

The selfs are the last class, and till very lately were least in esteem. At present they are attracting as much notice from connoisseurs as they always have from the uninitiated; and that from their intrinsic merit rather than from an advance in the goodness of modern varieties, for the advance has been less rapid than the great increase of late in the number of named selfs would lead us to suppose. Martin's flowers are numerous, and were little thought of at first; nor are any of them, except Mrs. Sturrock, an improvement upon their predecessors. Spalding's flowers had the luck to come in somewhat later, when more inquiries were made for selfs, and, in consequence, they obtained a place beyond their real merits. They are all good, but none of them are a real improvement in properties upon what were grown twenty years ago. Campbell's Pizarro is an advance, having the stiff petal and brown colour of Spalding's Mary Gray, with the advantage of a perfectly flat and circular pip, and exact proportion in the parts; and therefore it may be pronounced the nearest

approach yet made towards a faultless flower. Its drawback is that it is sombre instead of bright; its colour is not, like that of Maria, one that would insist on pleasing in spite of many faults. Next to Pizarro I should place Mrs. Sturrock, notwithstanding its flimsy petal and undecided colour. And then—perhaps—Othello. After these would come Nonsuch, Blackbird, North Star, Vulcan. Then Bessie Bell, the Metropolitans, Meteor Flag, Hey's Apollo, and many others. It will be observed I have not inserted in this list Lord Clyde, which is not because I rank it with the "many others," but the contrary; because I cannot yet satisfy myself where to place it; probably among the first three; but I must grow it another year before I can tell its real value.

And now to conclude. The properties of an auricula blossom being supposed to consist in form, colour, and substance; the substance being as leathery as may be without clumsiness; the general form circular and flat; and the colour, whatever it

is, bright and pleasing; the lobes six in number (and therefore broad) and elliptical; then the form of its component parts comes into review, and here it is that the self differs from the edged classes. In the latter, a line drawn through the centre should leave four breadths on each side of it nearly equal, for the eye, the paste, the colour, and the edge. But in the self the two exterior circles are united into one, and therefore the paste should, at any rate, never fall short of its due proportion, but rather should occupy a little broader space than in an edged flower. Nor should it ever be angular; the smallest inequality catching the eye so much more readily against the broad unbroken contrast of self-colour. Now it happens that both these particulars are just those in which most of our present selfs most offend. Very few have their proper breadth of paste, or have it circular. Pizarro has both, and therein consists its advance upon its predecessors.

REV. GEORGE JEANS, *in the Florist.*

WINDOW AND BALCONY GARDENING.

On receiving the kindly-expressed and valuable answers to my inquiries in the paper entitled "An Invalid's First Attempt at Gardening" (FLORAL WORLD, vol. iii., p. 193), I set to work with refreshed energy on my arrangements for the winter prosperity of my favourites. That I have not fully realized the editor's encouraging prognostications, I attribute partly to the unusual severity of the season, and partly to my health preventing my giving the plants sufficient air after they were once removed to my window. Still, on the whole, I have reason to congratulate myself on not experiencing greater losses, and, at the time I write, the balcony is filled with various luxuriant specimens, though but few of those I described last year.

To commence with my grand achievement, I have the pride of recording the *Dracæna* is the centre ornament of my stand, in health and beauty. I took it in on the first turn of autumn, and watched it with trembling anxiety during many months, when it appeared doubtful of putting out another spike, and the last looked of a dingy green, very corroborative of the editor's fears it would perish! However, the plant lived on, and in the third week of April I ventured to put it out in the balcony, bringing it, and others of the less hardy plants, in every evening for some weeks. Now (August) it is rearing its gay

leaves brightly, and the centre spike is unfolding most satisfactorily.

The *Aristolochia* braved the winter without protection; it is trained against the iron trellis of my verandah. It began to shoot about May, and is well covered with leaves, though not much grown, and showing no signs of flowers. The *Nerium* has grown well, and the *Bouvardia*, after nearly dying, is a healthy plant with many flowers, the *Ceanothus* is growing well on a corresponding trellis, and has a good spike of bloom now. The winter, however, proved too severe for the other plants, and greatly to my disappointment, I failed in rearing the little plants of *Solanum capsicastrum*.

I now come to the accomplishment of my wish for raising bulbs in the window. The editor of the FLORAL WORLD kindly answered my inquiries on this subject (Vol. iii. p. 322), and I obtained in consequence a supply of hyacinths, crocuses, snowdrops, and *Lachenalia quadricolor*. Finding that there were other bulbs which might thrive with similar treatment, I added *Polyanthus narcissuses*, and a selection of *ixias*, and bulbs of that character. They were all long in coming up, and, owing to the over-dryness of the atmosphere in my room, and the absence of fresh air, they mostly grew too rapidly, and failed in perfecting bloom. Still, in a less severe winter, and in a case where the plants

might have been aired in the balcony when fine, I am quite clear, from this experiment, that the following bulbs would succeed well:—*Lachenalia*, *Ixia*, *Sparaxis*, *Babiana*, *Tritonia*, *Scilla præcox*, and *Anomatheca cruenta*; the three last-named I succeeded in obtaining luxuriant bloom from by giving them abundant air on a window-sill to the north from May. I should mention that the *Tritonia* did not blossom till June, and the *Anomatheca* a month later; the former was very showy and handsome, the

latter would have looked better in a border or clump. The *Scilla* flowered early in February. With *Polyanthus narcissus* I succeeded fairly; their height was rather too great, but the plants were healthy, and flowered well. One "Grand Monarque," planted the end of November, was out well by the first of March, and had a lovely bunch of eleven flowers. Few of the hyacinths and crocuses flowered.

LANSDOWNE.

ALOCASIA MACRORHIZA VARIEGATA.

THE natural family of plants, of which the Wake Robin of our hedgerows is the only British representative, furnishes us with many of the most beautiful of our foliage plants. Thus, we have all the varied forms of *Caladium*, *Pothos argyræa* (that beau-

plants remarkable for large and conspicuously variegated foliage, *Alocasia macrorhiza* variegata is, without doubt, the best. We give a little sketch below, which will furnish some idea of the habit of this plant while young. The specimen from which it



ALOCASIA MACRORHIZA VARIEGATA.

tiful plant which Mr. Low introduced a year or two ago), *Alocasia metallica*, and dozens of species of *Philodendron* and *Anthurium* which, though they are seldom seen in English gardens, are yet extensively cultivated upon the Continent. But of all the

was drawn was only a few months old; as it attains maturity it makes a thick, erect stem, and the leaves are thrown out in noble grandeur. It will make a grand specimen, which nothing that has yet been introduced can rival. The leaves in the

little plant above-mentioned are more than two feet and a-half long, but they will probably attain double that size. It is impossible, without the use of colour, to give an idea of the variegation of this plant: our sketch, therefore, only shows the habit of it. No two leaves are alike; some have nearly half their surface of a creamy white, while others have large irregular blotches intermingled with smaller spots, some of them of pure white, others very pale green. The leaf-stalks, too, which clasp the stem, are usually striped like a ribbon.

It was found in Ceylon, and was sent by Mr. Thwaites, the enthusiastic director of the Botanic Garden at Peradenia, in that island, to the Royal Gardens at Kew. It enjoys a good rich soil; it can scarcely be too good; and, as it grows naturally in marshy soil, it requires a plentiful supply of water. Indeed, where there is a tropical aquarium, the pot may be half plunged in

the warm water, with evident advantage to the plant. It must not be dried off too much in winter, like many of the more commonly cultivated aroids, but, of course, during that period of the year the pot should not stand in water. The only way of propagating it will be by the young off-sets which are freely made around the base of the stem. As soon as the plant has made a stem, it might be cut off close to the ground, and if kept moderately dry, with a good bottom-heat, it will strike freely; the old root will then throw up suckers plentifully. This is the first year it has been exhibited, and it has already gained several prizes. Next year will see it a conspicuous object in every collection of foliage plants. While it was still young, there was some confusion about its name; it was several times exhibited as *Alocasia* (or *Colocasia*) *edulis* *variegata*, but that above given is its correct cognomen.

PROFITABLE GARDENING.

CHAPTER XX.—CULTURE OF THE APPLE.

Choice of Trees.—In selecting trees for the formation of an apple orchard, or a small selection in a private garden, care should be taken first to have only those sorts that are best adapted to the intended purposes and to the soil and situation of the place. It is also important that the trees should be clean in growth, the wood ripe, the graft perfectly healed, and the required sorts on stocks adapted to their habit and the way in which they are to be grown. In the choice of standards it is no detriment, but rather an advantage, if the stems are furnished with short side-branches closely pinched in from near the graft (if *that* be near the root) to the head, as the stems will be stouter, stonger, and heartier than those that have been run up quite bare by cutting away the side growths. In the latter case the stems may be clean and straight, but they will be slender and weak; in the other the stems will have derived strength from the side-shoots, which may be cut clean away from the bottom upwards, as the head acquires power to use the whole sap of the tree. But as the majority of standards are worked standard high

the stems are generally strong before the graft is inserted, and the planter has nothing more to do with the formation of the tree except to regulate the growth of the head. In all cases orchard standards should be on crab stocks, which give great vigour to the varieties grafted on them, and readily adapt themselves to a variety of soils. But for gardens, strong growing sorts such as Norfolk Beefing, Blenheim Orange, etc., make very excellent medium standards if worked on the Doucin stock, and the best method of forming them is to choose trees worked near the ground with clean single stems. These stems are to be allowed to run up to six or seven feet, and then the head can be formed of three or four of the strongest top-shoots; while attaining this height the side-shoots should not be cut away but regularly pruned in to prevent any of them taking the lead; they will materially assist in swelling the stem and promoting an early habit of bearing when the head is formed. They should be removed afterwards, a few at a time, by a clean cut to the base, even with the circumference of the stem, beginning from the bottom and proceeding

upwards. If cut away in July the scars will heal over before winter, and the leading branches, which are to form the head, will ripen more effectually. In selecting dwarfs, espaliers, and bushes, Doucin stocks are always preferable, as the trees upon them are less rampant in their growth, begin to fruit earlier, and bear frequent litting better to subdue the growth and promote fruitfulness. Those who wish to grow very large apples should give the preference to dwarfs on crab stocks, which will extend to a vast circumference if allowed plenty of room, and the fruit will be less likely to be blown down by high winds. Though grafting is the mode of propagation generally adopted at the nurseries, it is probable that budded trees are the best in the end, and the amateur who turns his hand to the raising of apple-trees cannot do better than give a preference to budding over grafting.

Planting.—The numbers and sorts to be planted should be determined early, so that the trees may be got home from the nursery rather before the leaves have wholly fallen than after that has happened. Early planting is of the utmost importance, as the trees will make fresh root long before winter sets in, and if furnished with a few fruit spurs, they may give a small crop of fruit the next season, which is impossible if the planting be deferred till after winter has set in. The soil in which the apple thrives best is a deep sound adhesive loam, with a dry subsoil. In any case the soil must be well drained and deeply worked before planting. A hungry peat may be made fit for the apple by the liberal admixture with it of marl, sand, and manure; a similar dressing will improve barren sandy soils for the purpose, but instead of adding sand and clay would be preferable, especially if dug the previous winter and exposed in ridges to the weather for twelve months previously. But the use of manure is always to be avoided if possible, and in any good soil that will produce a cabbage the apple will thrive better without manure than with it. Where the planter suspects or knows that the subsoil is gravel or

cold clay, it will repay the extra expense to make a station for each tree by laying down a pavement of old bricks and other hard rubbish, to be well rammed in and grouted with some cheap cement. This should be at three feet deep and six feet square for each tree, unless the soil is excessively wet, in which case one foot depth of soil is sufficient, and when trodden firm the roots of the tree are to spread out on the level, and covered with twelve or eighteen inches of soil so as to make for each a hillock. Whichever plan be adopted the tree must not be placed in the soil deeper than it was originally; indeed, if it has evidently been planted too deep, it may be more elevated in its new position, as it is impossible for it to prosper if the roots are buried deeply and any portion of the stem which should be exposed to the air is hidden in the soil. On all good soils of firm texture, trench, level, and plant with as little injury to the roots as possible and be sure to cut clean away any damaged roots, tread firm and stake at once; if the tree rocks in the wind it can never get a firm hold of the ground or maintain an upright position.

Standards.—Three or four strong leading branches are quite sufficient to form the heads of standards; they should be symmetrically placed and pretty equal in strength, and all intermediate spray should be removed. Generally when received from the nurseries the shape of the head is already determined. As a rule, the less pruning standards have the better, the knife should be used only to cut away gross ill-placed shoots, late growths of a green watery nature, and side-branches that cross each other or that take the lead to the weakening of the other parts of the tree. Varieties of pendant habit may be improved in their style of growth by being headed down when well established in the ground, and this is to be done by shortening the branches back to nine or twelve inches long.

Dwarfs.—These may be considered to include half-standards, pyramids, and bushes. They should be on Doucin stocks, and their growth should

be regulated by pinching with the finger and thumb during the months of June and July. By a careful selection of varieties the desired forms may be obtained with very little artificial aid, as some kinds naturally grow into dense bushes, others make spreading bushes and pyramids. The best form for all dwarf fruit-trees in small gardens is that generally known as the "gun barrel," or upright bush. This form is produced by closely pinching in all the side-shoots to cause the formation of secondary shoots and spurs. The trees may be five or six feet high and not more than two feet in diameter, regularly furnished from top to bottom with short side-shoots regularly clothed with bearing spurs. We have in our fruit garden a collection of pears and apples grown in this close fashion, and they bear most profusely and admit of being planted in rows three feet apart, and the trees two feet six inches from stem to stem. The majority are not more than eighteen inches through. Ripston Pippin, Nonsuch, Nonpareil, Baron Ward, Cox's Pomona and Orange Pippin, Devonshire Quarrendon, Golden Harvey, Golden Pippin, Cornish Gilliflower, are among those in our collection which most readily submit to this method of culture. The trees are lifted either annually or biennially, according to their habit of growth. Those that bear freely are lifted biennially, those that grow luxuriantly are kept in check by annual lifting. If any portion of the stems are bare, we furnish them by inserting buds in July, and the shoots from these buds and all other new shoots are pinched back to three leaves from the base, as soon as they have made about five or six leaves each. The side-shoots are again pinched back in the same way, and the trees then get regularly clothed with bearing spurs. This is the best method of appropriating a small piece of ground in a small garden, as there is a certainty of a large production sooner from the first planting than by any other method. Twenty or more varieties can be grown on the same space of ground as would be required for one standard tree, and the

trees being completely under control, afford much pleasurable recreation in their management. But for market supply the old fashioned standards are infinitely more profitable, and we would not be without a few standards for the supply of the kitchen, even had we the largest imaginable collection of dwarfs and bushes. Those who have not seen trees of this kind may regard the Irish yew as the model, on the outline of which they are to be formed.

Espaliers.—There are various ways of forming espaliers. The usual method is to cut the trees down to within a foot of the ground at the first planting, and allow three shoots to start to form a fan-shaped espalier. We prefer one central upright leader, and a regular series of horizontal branches, as the trees come sooner into bearing when trained horizontally than when trained at the more natural angle of regular radiation from the centre. Five feet is quite high enough, and from the very first they should be carefully trained, breast-wood cut away, side stems encouraged, and blank spaces should be furnished by budding or grafting. Some espaliers we planted a few years since were too long in the stem to furnish the lowest line of rails to which they were to be trained, and, instead of working buds or scions on them to form shoots near the ground, we cut incisions, in the month of May, half an inch wide and half an inch deep, just above where the branches were required, on each side of the trees. These incisions were covered with grafting clay. The next season these incisions were perfectly healed, and the majority of them had formed buds immediately at the base; these buds pushed and proved as good shoots as if they had been worked, proving that those who are unskilful in the insertion of buds and grafts, may adopt a more easy method of furnishing the bare stems of espalier and bush apple-trees.

In training espaliers it is very important to tie in early all the new shoots of the season, that they may have the required direction before the wood begins to harden, after which they may have to be more or less

strained, to bring them to their places. By a little management, when the shoots are soft and green, the wall or espalier-fence may be most regularly furnished, as a front or back shoot can often be brought round to fill a gap, where there is no side-bud in the proper position. Every strong shoot should be trained in full length, there should be no pinching, as in the case of bush trees, and the whole space of the espalier should be filled as soon as possible with strong, straight, regularly-placed branches. At the winter training worn-out branches may be removed and replaced by young shoots, and at the summer pruning forethought must be exercised to provide, if possible, for the replacement of decayed branches, by training in young shoots so placed as to be suited to succeed them. The ordinary method of training the trees to upright

stakes for a few years is frequently the cause of the trees acquiring ugly shapes and bad proportions; we prefer to have the espalier complete from the first and to grow the trees to it, as far preferable to growing the trees first, and then constructing an espalier to fit them. Our espaliers are formed of oak posts and horizontal wires (common No. 1 iron wire, painted). The posts are six feet apart, and five feet six inches high; the wires are six inches asunder, from top to bottom, and the trees are planted in the centre of each breadth of wire, midway between every two posts. The stems of the trees thus afford a central stay to each set of wires, and their branches are trained each way as far as the posts, so as to clothe the whole with healthy foliage and fruit. Our next duty will be to give a list of sorts.

BEDDING FUCHSIAS.

I **ET** to write this paper in the midst of all the best and many of the worst fuchsias for bedding, clumping, and border decoration. Close beside me, in a half-wild nook, where my retreat is, are some large fountain-like plants of a dear old friend, *Fuchsia virgata*, sometimes described incorrectly as *coccinea*, sometimes still more incorrectly as *Wilsoni*. This is the hardy bush fuchsia of the little forecourt of country cottages, to be seen in all parts of the country now whichever way you travel, and, at this time of the year, a most beautiful object. The best I can remember are in some cottage gardens near the Darley Aras, at Cobham, in Kent, which I always get a peep at when I travel that country to see the ferns at the "Mount," a wonderfully romantic spot in Cobham Park. I remember, also, some fine plants of it in the gardens about Lyndhurst, Minster, and Ringwood, in the New Forest, where you will see in all the windows *Richardia Ethioptica* by the dozen, in fine perfection. It is quite unfit for a gay garden of the modern school, but most appropriate for banks and wildernesses. It will grow in any soil, and only needs to be cut over close as soon as dead from frost, and otherwise left to itself. I used to grow it on the lawn, planted at regular distances in pairs beside the walk, but was obliged to give it up,

because my floral friends compelled me to defend it when we were gossiping about garden matters, and comparing notes on things new and old. I cleared them off the lawn simply for the sake of peace, but in the shady places, mixed with ferns and large-leaved foliage plants, I see now how they illustrate to the letter the principles of fuchsia culture. Though most beautiful on the turf, where they arched over symmetrically, laden to the tips with their small coral-like glittering flowers, they are vastly more beautiful now in the shade. After a fortnight's hot weather, they used to get a little burnt and brown at the base, and if denied water, would become quite yellow in the foliage long before the season was at an end. But now in the shade and cool, their foliage is as fresh as new-mown grass, and they grow more bushy and dense, without losing their proper pendant character. Another old friend close by, and also in the shade of the trees, is *gracilis*, of much smaller growth than *virgata*, more abundant in bloom, and the blooms exactly on the model of those elegant coral eardrops that added so to the charms of the ladies a dozen years ago, when I gave my days to courtship and my nights to dreams. This also is as hardy as any of our native shrubs, and only needs to be cut over close at the fall of the year, and be

refreshed with a spadeful of rotten dung over the crown at the same time, to continue any number of years as a permanent item in the planting. The true *coccinea* is a taller-growing plant than *virgata*; it rises six feet, the other only four, and the blooms are larger, and the habit less pendant. *Conica* and *globosa*, the latter a most beautiful small-flower fuchsia, well known in all gardens, may be used in the same way, and will grow stronger from year to year. We must not leave fulgeas out of this catalogue of fuchsias for clumps; it is the most decided in character of all the border kinds, and much better adapted for bedding in masses than it has credit for. Make a row of fulgeas, and let there be in front of it a silvery line of suitable height, and what can surpass it for richness and novelty of aspect? The large herbaceous leaves, the general predominance of the rusty stain in stems and midribs, and the peculiarly lively colour of the flowers, are excellences not to be slighted, simply because this is an old cottage flower, altogether unfit for the exhibition-table. The way to do it is to take it up and stow the plants away in boxes of sand till January; then to start them into growth, and propagate by cuttings, and give good greenhouse culture as for show fuchsias till May, and then turn it out, when it will grow for the rest of the season in a style quite surprising to those who have ill-treated it hitherto, because of its humble pretensions.

But if our lawns and banks are to be adorned with fuchsias, we may as well have the very best that can be had. I flowered a great many species and rare varieties when preparing "Garden Favourites" for the press, and of these two were figured in that work, viz., *corymbiflora* and *Toddiana*, two of the most extraordinary fuchsias we possess, as will be seen by reference to p. 316 of that work. Now, to make a grand boss of flowers on a lawn, grow for the purpose a few of those huge out-of-the-way fuchsias, and turn them out into deep beds, consisting of half yellow loam, a quarter part leaf-mould, and the remaining quarter old manure from a melon-bed, and you may beat the madman who went up in a balloon without realizing a sensation. If you cannot produce a sensation by this sort of practice, assuredly there is an end of such phenomena in gardening. The flowers of *corymbiflora* are four inches in length, the tube measuring three and a-half inches, and the corolla half an inch. The sepals, rather more than half an inch long, reflex completely back on the tube, and as the flowers are produced in trusses of about

eighteen or twenty each, the appearance of the plant when in bloom is altogether unique. This fuchsia was raised by Mr. Standish, of Bagshot, from seed sent from Cuzco, in Peru. The plant attains to a height of six feet, and ought never to be flowered at less than five feet, or its real grandeur cannot be displayed. Another of these grand subjects is *serratifolia multiflora*, also from Peru, and a glorious thing for a pillar in a conservatory to flower all winter. This will also go six feet, and produces a profusion of large vivid vermilion flowers.

Keeping still away from the race of florists' flowers, let me commend to your notice that fine old fuchsia *Corallina*, which you may at any time see in fine trim at the Crystal Palace and at Kew, but rarely in any private collection. This and the strong growing hybrids that make long joints, large flowers, and that are nearly of one colour, both tube and corolla, are among the showiest and boldest for pyramid masses on lawns, and for the centres of beds of fuchsias. It is utterly useless to attempt to dwarf any of this class: they may, indeed, be grown to any size, from a foot high and upwards and to flower well, but the style is too coarse, too bold, and too sprawling for such treatment. Take *Clapton Hero*, trim it up either in a regular series of long rods, five or six feet high on straight stakes, or get a set of standards regularly furnished in the fashion of umbrellas, and then let its flowering shoots hang as they please, and you have one of the showiest of all large growing fuchsias for open air uses. *Riccartoni* is another for the same purpose, or, as it is tremendously hardy, it may be left out all winter to grow as a border or wilderness bush, and to furnish the best of all flower-sticks. Next in the same way, but not quite so rampant in growth, is *Madame Brieri*, which has a long tube of rosy crimson, sepals semi-reflexed, corolla of the same colour, a more perfect self than *Alpha*, and quite as showy, though scarcely so full in bloom. Here, as in *Alpha*, *Clapton Hero*, *Corallina* and others of the dashing out-door class of fuchsias, there is an ample foliage and a sturdy habit, and the plants should be large to tell with their proper effect. Now let us consider the florists' varieties as bedders.

DARK.

LITTLE BOPEEP.—This is the truest bedding fuchsia in existence. Foliage dense and dark, short joints, plant very compact, naturally branching in a graceful manner, yet so sturdy as never to need

support. Tube and sepals shining scarlet, sepals beautifully reflexed, corolla rich violet, and the form of half a globe. There is no fuchsia that will give more bloom than this, and when loaded with ripe berries, which no bedded fuchsia ever should be, it still throws up new shoots laden with fresh blooms, and continues marvellously gay till actually stopped by frost.

AUTOCRAT, BEAUTY OF THE BOWER, CLIMAX, GENERAL WILLIAMS, PRINCE ALBERT, VOLOANO DI AQUA, BRITISH SAILOR, EMPEROR NAPOLEON, and OMEGA are all good bedding fuchsias, very distinct when judged as specimens and as florists' flowers, but very nearly alike when considered as bedders, and of very nearly uniform behaviour when planted out; if a row of these was planted, one of a sort all through, a casual observer would not perceive any very great difference amongst them, and therefore it matters little which be chosen for a set, and whoever possesses two or three of the number, need not trouble to obtain any of the others for bedding purposes merely.

ORLANDO.—Crimson sepals, corolla as dark as the flowers of *Lotus Jacobea*, or *Black Prince Hollyhock*. Grows well, flowers freely, and is in every way good, but not effective. For pot culture this is a beauty.

CŒUR DE LEON.—This is one of the best fuchsias for a small bed, or for an edging to stronger-growing sorts, if struck as late as April, and stopped at the required height. Tube and corolla bright scarlet, highly varnished, and the sepals reflex most elegantly, the corolla is a clear violet and forms half a globe. When in full bloom, the foliage acquires a bronzy hue, which adds to the effect if the next row consists of some light green and white flowered fuchsia, but if such a splendid foliage as *Bopeep*, *Excellent*, or *Catherine Hayes*, it is to the disadvantage of the variety.

CATHERINE HAYES.—This may be used either quite dwarf at from six inches high, or grown to eighteen inches, or two feet, according to the purpose it is required for, the tube and sepals are bright scarlet, corolla light purplish blue inclining to slate. This is one of the very best of bedders, and in the mass has a fresh and lively appearance, owing to the predominance of blue in the corolla.

ALBERT SMITH.—This is like the last in habit, and may be dwarfed if necessary. The tube and sepals are of the same colour, but the sepals are of great width, and well reflexed. The corolla is a rich violet. A profuse bloomer and first-rate bedder.

ELEGANS.—This is one of the best bedders among the many excellent fuchsias raised by Mr. Banks, colours rich, glowing, and the sepals well reflexed. It will serve for any purpose for which a first-class dark fuchsia is required, and it is one of the most profuse bloomers.

EMPEROR NAPOLEON.—Deep scarlet crimson-purple corolla, reflexes well and grows superbly.

ÉTOILE DU NORD.—Though one of the very best exhibition fuchsias, this is not so good with me in the open ground, as others that come near it in colour. It is a lovely fuchsia, the sepals are stout and short, and each point turns back to the corolla, which may be described as black violet.

EXCELLENT.—Well-named; grouped as I have it with *Bopeep*, I cannot, at a distance, distinguish one from the other; it is so substantial, compact, and showy. But it differs in being more naturally pyramidal in habit, the foliage has less of the blue tone so peculiar to *Bopeep*, and the flowers before expanding are very globose. Every grower of fuchsias should possess it.

GLORY.—Here is an old friend that everybody knows. The best use for *Banks's Glory* is for tall pyramids in the centres of beds, or diffuse spreading plants for baskets. It makes a good third row if kept to the required height, and is showy and graceful.

OMAR PACHA.—Crimson tube, purple corolla, deserves separate mention, because extra good.

PRINCE OF WALES.—Crimson sepals, deep violet corolla, beautifully proportioned and effective. This a rampant grower and one of the very best for standards, pyramids, pillars, and to train over rustic-work. To run it up six or eight feet in a season is mere child's play. I get it five feet in five-inch pots. For a grand clump on a lawn, *Prince of Wales* in the centre, and *Banks's Glory* round it, and the mass may be bloomed to the ground in the form of a *Deodara spruce*.

SOUVENIR DE CHISWICK.—I have plants of this on a raised bank with *Bopeep*, and they closely resemble each other. My *Souvenirs* are all semi-double this season; in another year or two, probably, our old friend will be quite double.

LITTLE TREASURE.—Like *Catherine Hayes*, but less blue in the corolla, excellent for use as a dwarf for edging.

TRISTRAM SHANDY.—Rosy red tube and sepals, pale blue corolla, sepals short and stiff, and thrown back sharply. Very effective in a mass, and quite a novel style of colouring. No wonder it has become a favourite.

VANGUARD.—Crimson tube and sepals,

corolla intensely dark. The sepals are very broad and well reflexed; it is fine out of doors.

BIG BEN.—This is a very striking fuchsia, and grows well in the open ground, better, indeed, than in pots, so far as a free and showy bloom is concerned. It is well named, for the corolla is long and regularly bell shaped, and is a beautiful object when lifted on the finger to display the markings of dark purple on the bluish-purple ground of the interior of the bell. The sepals reflex at right angles, and the corolla is too long to satisfy a fastidious taste, but it is a bold and characteristic flower.

CRINOLINE.—My out-door plants of this are true pyramids, three feet high and two feet six through at the base, and are really magnificent in their profuse display of fine flowers. It is a dashing fuchsia to turn out, and will never disappoint.

DOUBLE DARK.

WONDERFUL.—This is supposed to be beaten by some of the later kinds, but for bedding purposes it is the liveliest of all the double fuchsias. It looks best as a diffuse pyramid, and if twice stopped in spring, it will throw out flowering shoots horizontally, about a foot long, with great regularity, and will be a mass of bloom for three months together, if not allowed to ripen any berries.

SIR COLIN CAMPBELL.—**MARQUIS OF BRISTOL.**—Sir Colin is the best of the two, but it is heavy-looking when bedded. Nevertheless, there is a bold grandeur about it in harmony with its name, and it is every way worthy of promotion to the upper chamber as Lord Clyde. Marquis of Bristol is inferior in foliage and in substance of corolla, and it does not hold so well under a fierce sun.

LE PROPHETE.—Similar in habit to Sir Colin, corolla deeper and richer purple, and a shade longer. Otherwise the difference is not great.

ADONIS.—Crimson tube, whitish blue corolla, does not prosper out of doors.

IMPERIALIS.—Deep red sepals, corolla violet. If grown strong before being turned out, blooms profusely, and is very effective, but needs a rich soil and plenty of water; will stand sun well.

VIOLE FLORA PLENA.—Crimson tube, violet corolla, capable of great endurance, and very effective.

The light and fancy kinds must be deferred enumeration till next month, or the list will monopolize an undue proportion of space in this number. I see plainly, that for bedding purposes, three-fourths of my light and fancy varieties are only fit for the rubbish-heap, and as soon as my notes are completed, very many of them will end their days there.

SHIRLEY HIBBERD.

THE CULTIVATION OF GLOBULAR CACTEÆ.

It was very general some years since (and is still too frequent) to pot these plants in a mixture, the chief part of which was brick rubbish, and to keep them continually in a dry arid atmosphere. This, it was argued, was the most natural position for plants which are natives of the warmest and driest parts of the tropics; but it was forgotten that these localities receive deluges of rain at certain intervals; and it was then not so certain as now, that we may sometimes, by the judicious application of art, arrive at results unknown or unfrequent in nature. It is undoubtedly of the first consequence, that the circumstances by which plants are found affected in a state of nature should be well considered by the cultivator before he commences operating on newly-imported subjects, and the predominant ones adopted as the basis for the artificial treatment; yet it does not follow that every wild plant is found in the best possible situation for the fullest development of its

parts. Taking this into account, it becomes apparent that art may sometimes assist or even improve on nature: so with cacti, they are found where the smaller deposits are formed, in places seemingly sterile, and where they receive but little nourishment from rain, or other natural causes; still they exist: but it seems probable enough in theory, that if they in the same situation received a more abundant supply of aliment, that a corresponding increase in the vigour and size of the plant would result; and this, which appears probable, the practice of cultivators proves correct. In the cultivation of these plants we would retain a portion of the old system, so far as keeping them in a dry atmosphere for about eight months of the twelve can be called retaining it; but the brick rubbish we explode altogether. The soil we use for the whole of them is a mixture of peat and loam, in equal quantities, with about a third of the whole well-rotted

leaf-mould and sharp sand mixed; this requires to be well broken and thoroughly incorporated. About the middle of April they should be repotted. This is rather a delicate operation: the old earth should be gently shaken from the roots of the plants and the new pressed firmly round them, observing to keep the base of the plant a little above the rim of the pot; when finished, three or four small sticks thrust into the earth close to the sides of the plant will keep them erect and steady, until they have attained a hold by the new roots. After potting, they should be at once conveyed to a previously prepared dung-bed, having what is technically termed a "sweat heat" of from 85° to 95° temperature. They require shading from strong sunshine for the first fortnight, and to be kept moderately moist; we have even gone so far in hot dry weather as to use the syringe upon them, though this might be attended with some danger in close damp weather. In this situation they should remain from three to four months, giving them air in rather small quantities every favourable opportunity; at the end of this time they will be found to have made a surprising growth, and may then be removed back to the succulent house, the stove, the greenhouse, or the windows of the sitting-rooms, and may be expected to produce flowers in the course of the fol-

lowing month. The difference occasioned by this treatment will be apparent the first season, for from poor little starvelings, such as are too frequently seen, they will be transformed to fine healthy and large specimens. We have thus given a brief outline of our own practice, in which there is nothing difficult, and by which fine plants may be speedily obtained. And we believe we cannot conclude this article better than with a list of a few most desirable to those about to form a collection:—

Mammillaria atrata.	Cereus cæsius.
Andræa.	tenuispinus.
carnea.	undatus.
cirrhifera.	Echinocactus densus.
spinis fuscis.	echinatus.
coronaria.	Eyresii.
depressa.	Gilliesii.
fulvispina.	imbricatus.
Karwinskii.	latispinus.
magnimamma.	Mackieanus.
quadrispina.	montevidensis.
sphaacelata.	parvispinus.
Wildiana.	platyacanthus.
Melocactus depressus.	scopa spinis albis.
Greugelii.	subgibbosus.
macracanthus.	tenuispinus.
polycanthus.	tubiflorus.
pyramidalis.	Cactus corrugatus.
Sellowii.	reductus or nobilis.
Cereus affinis.	senilis.

CULTURE OF DIONEÆ MUSCIPULA.

The *Dionæa Muscipula*, or Venus's Flytrap, is naturally an inhabitant of marshy spots in Carolina, from whence it was brought in 1783; but, notwithstanding the length of time it has been known to us, is still rather scarce, from the circumstance which operates in the case of other rare plants—its culture not being understood. The name flytrap conveys an idea of the curious mechanical powers of the plant, which it never fails to exercise on every unfortunate delinquent that may happen to intrude within the sphere of its action. It is not necessary to enter into an anatomical digression to explain the cause of this action, or to broach the physiological question as to the object to be gained by the plant, thus imprisoning to death the unconscious insect, first tempted within its clasp by the sweet vinous liquid exuded from the epidermis of the foliage, further than briefly to mention the manner and probable actuating cause. The petiole, or leaf-stalk, is flattened, elongated, and winged, and, like the whole plant, remarkable for the

number of hairy processes distributed over it: the leaf proper is nearly round when extended horizontally, but rising from the mid-rib on each side, in the form of two equal lobes, the margins of which are thickly set with strong hairs, and act in the manner of the teeth of a steel trap; these lobes, immediately a fly, or any firm substance, touches the upper surface of the leaf, close tightly together over the unfortunate victim, which hold it retains so long as the cause remains.

It has been plausibly represented that the probable object is, the furnishing the plant with ammonia arising from the decaying body of the insect.

The treatment proper for this little botanic curiosity is nearly allied to that usually adopted with the Indian class of *Orchidææ*.

Potted in a mixture of sphagnum and fibrous peat well mixed with a portion of charcoal distributed throughout the whole, and placed in a warm house with a liberal supply of water, but little trouble need be

apprehended in its management : in potting, it should be kept an inch or two above the rim of the pot, and if the plant is small, it should be covered with a bell-glass until established, after which the covering may be dispensed with, for if continued too long, there is some danger of the plant damping off. To propagate it, it is only necessary to take a portion of the leaves from close to the stem, and treated as recommended for small plants, it will speedily form roots ; indeed, a single leaf will strike and become a plant, but it is rather a slow process. There is, however, one point in its management I would particularly mention, as being of the first consequence. In by far the greater number of places where it is grown I have observed it to be con-

stantly covered with such attention that one might be led to suppose it would not bear a breath of fresh air to come near it : this, from experience, I pronounce to be erroneous ; so far from receiving injury from such a cause, the plant is as much invigorated by the admission of air in fine weather as any other plant in the same house ; in short, to grow it well it is only requisite to assimilate its treatment to that of the plants grown with it in a damp stove. Neither would I recommend it to be kept standing in water as is sometimes done, believing it to be, if not hurtful, at least unnecessary, it only requiring to be constantly moist and nothing more.

W. HUNT.

DON'T BE DISCONTENTED.

Is that beast better that has two or three mountains to graze on, than a little bee that feeds on dew and manna, and lives upon what falls every morning from the storehouse of heaven's clouds and providence ? Can a man quench his thirst better out of a river than a full urn, or drink better from the fountain when it is nicely paved with marble than when it

swells over the green turf ? He that pro-pounds to his fancy things greater than himself for his needs, and is discontented and troubled when he fails of such purchases, ought not to abuse Providence, or blame his fortune, but his folly. God and nature make no more needs than they mean to satisfy ; and he that will take more must look for satisfaction where he can.

GARDEN AND GREENHOUSE WORK FOR SEPTEMBER.

ANNUALS, to bloom early next season, should be sown at once on hard ground, in a dry position ; if elevated above the general level, all the better. The following are the best leading sorts to sow now, to be transplanted in March, to bloom in clumps or masses, when the bloom will be much finer as well as earlier than from spring-sown seeds :—Calliopsis, Clarkia, Collinsia, Convolvulus minor, Godetia, Escholtzia, Hibiscus, Iberis Kermesina, Jacobea, Larkspur, Lupinus, Nemophila, Nolana, Poppy (dwarf French), Schizanthus (dwarf), Silene rubella and armeria, Viscaria oculata, Venus's Looking-glass.

AURICULAS may be increased now from offsets ; if rooted, all the better ; if not rooted, put them round the sides of pots, and they will soon strike.

BORDER PLANTS of questionable hardiness to be taken up at once and potted, or at least one or two of a kind to propagate from, and prevent entire loss. Choice Pentstemons, Rudbeckias, etc., are sometimes cleared off during winter. The potting of one of each will at least insure the saving of the variety.

CALCEOLARIAS should now be propagated in quantities. A bed in a frame is

preferable to pans and pots, as they can be lifted out for planting with good balls, and are not so likely to die off as those wintered in pots.

CARNATIONS and PICOTEEs, from layers, to be potted off as soon as well rooted, and cuttings taken at once of all good seedling Dianthus in the borders. Where the propagation of carnations has been delayed, they may be increased by cuttings under bell-glasses.

CELERY to be earthed up only when it has grown to its full size. A fortnight is long enough to blanch it, and it grows but little after the earthing.

HARDY BULBS of all kinds to be planted at once.

KITCHEN GARDEN to be kept clean, and the ground made vacant by removal of potatoes, etc., to be deeply stirred and planted with winter greens : the small refuse plants from the seed-bed will sometimes endure the winter better than those planted out strong six or eight weeks ago. Store root-crops of all kinds as fast as they can be got up.

ROSES to have the ties loosened three weeks after budding. Buds may still be entered, and cuttings put in for dwarfs.

Roses layered now, and left undisturbed till April next, will then be found well rooted, and may be taken up and potted for bloom the following autumn.

VINES forced early will now be disposed to break. Let them have a temperature of 55° to 60°, not higher, till the leaves are developed.

TO CORRESPONDENTS.

VARNISHED TIFFANY, PEA-TRELLIS, WALTONIAN HEATING.—You will much oblige one of the earliest subscribers to the *FLORAL WORLD*, by stating in the next number whether tiffany, which is of a so much more open texture than calico, would answer for being varnished, and also by giving a recipe for a cheap and transparent varnish. *Calico* is very expensive, and as any kind of cloth used would absorb a large quantity, the cost of the varnish would greatly exceed that of all the other materials of the structure. I would suggest fastening the cloth at the top by rings and hooks of brass, and with tie-strings at sides and bottom, as well as round the rafters, etc. This would allow of the removal of the cloth when desired, without disturbing the skeleton of the fabric; the sides could be looped up also at times for ventilation, etc. Zinc wire lattice attached to posts *inside*, forms an admirable and cheap support for peas. The wire should have a wide mesh, and need not be closer than ten inches above the ground, if put up immediately after the last earthing of the row. The posts, six or eight feet apart, should incline outwards a little at the top. The tendrils of the peas will take sooner by having the wire close to them, and room should be left for the branching of the peas as they advance in growth. The wire, rolled round an end post, may turn the corners. The whole apparatus will last a lifetime, with ordinary care, and look neat and tidy, as it is inexpensive and easily procured, which rods are not. The width can be adapted to the height of sorts cultivated, and if painted pea-green, will be an invisible green also. I may also say that I find German floats (which cost 6d. per box, containing some hundreds) answer admirably for heating a Waltonian case; of course colza oil is the best, and if a broad surfaced vessel—say five inches—be used, two or even three may float on the surface, and they will burn while the oil lasts with a steady heat and no trouble, except renewing oil and floats every twelfth hour or so. A great advantage attending their use is the increase or diminution of heat to any amount, as you light more or less of these inoffensive little lamps, which emit neither smoke or smell. The flame should reach within half-an-inch of the boiler, as it will fall a little as the oil is burned. The great secret of this invaluable case is the removal of cuttings or seeds, etc., as quickly as possible after rooting or germination. I find plants suffer in it by too long residence.—*Omicron*.

[We have no experiences of varnished tiffany, and *a priori* are unfavourable to the proposal of varnishing it. We should prefer for such a purpose unbleached calico. Nevertheless, tiffany might answer, and we shall be glad to hear if it does. Here is a recipe for rendering it waterproof: Old pale linseed oil, three pints; acetate of lead, one ounce; white resin four ounces. Grind the acetate with a little oil, then add the rest of the resin. Incorporate in an iron pot over the fire and apply hot with a brush. Perhaps some of the cheap varnishes would serve the same purposes, but we cannot

say, having long given up all such preparations owing to the cheapness of glass.]

PORTULACAS FROM SELF-SOWN SEED.—I wish through your publication to make known to my fellow-gardeners, that the portulacæa need not be considered a tender annual. Last summer I had a bed of this plant in a south aspect. In the autumn and this spring the earth was dug over and stirred with an unsparing hand, but to my astonishment there has appeared a very healthy plant of the scarlet portulacæa, self-sown. If the seed could withstand the intense cold of the last winter by the sea-side, surely we need not fear sowing it in the autumn in the open ground, when finer and stronger plants would be gained than by raising in a hot-bed and transplanting.

—*J. K. N.*

[We had self-sown plants of *mirabilis* on a rocky, green and fresh all last winter, that have flowered magnificently since June. For portulacæa a dry position is essential in all cases—moisture is death to them.]

FUMIGATING.—We have received from Messrs. Griffiths and Avis, of High Street, Coventry, a sample of tobacco paper, and with it an iron pot adapted for the slow combustion of the paper, and the delivery of a cool and long continued volume of smoke. The pot is six inches in diameter and seven inches high; it has a handle, and one vent hole near the bottom to keep up the combustion. It is the simplest of all fumigators, and can be used also for delivering the fumes of sulphur and lime for the destruction of red spider.

CHRYSANTHEMUM TRAINING.—"Just as the twig is bent the tree's inclined." By placing delicate little tufts of cotton wool among the shoots of chrysanthemums that are under training, the leader can be sustained and the branches depressed from the time they are half an inch long. The wool to be increased till the shoots are hard enough to be tied into shape.—*Linnæus*.

NAMES OF PLANTS.—*S. S. S.*—1. Like *Adiantum intermedium*, but too much crushed to determine from a barren frond. 2. *Doodia caudata*. 3. *Nephrodium exaltatum*. 4. Appears to be the same as 3 in a more fully developed state. 5. *Gymnogramma chrysophylla*. 6. *Nipholobus lingua*. 7. *Nipholobus pertusus*. 8. *Polystichium lobatum*. 9. *Selaginella caesium*. —*Brentingly*.—1. *Sedum denticulatum*. 2. *A. Scutellaria*, but we cannot say which. We could determine it if we had the lower leaves. —*R. G. Grelton*.—1. *Spirea ulmaria*. 2. *Nigella Romana*. 3. *A. Scutellaria*, too incomplete to determine. 4. *Linaria vulgaris*.

GREENHOUSE DIFFICULTIES.—*J. R. Tipperary*.—A variety of causes will induce the spot in geraniums, more particularly a want of firmness in the soil in which they are potted, and insufficient drainage, excessive gorging with artificial stimulants, such as guano or ammonia, will also occasion it. Pot in two-thirds good loam, one-third good rotten dung, one-sixth silver-sand, and use pounded oyster-shell for drainage. Ventilate according to the state of the external air, and it is a hundred to one if you are again troubled with spot. *Lilium giganteum*

would do well in a greenhouse where grapes ripen early. Keep it as close to the light as possible. Tuberoses should be grown in hot-house heat until they show flower, when they may be removed into the greenhouse. If they do not now show blossom, it is too late to do anything with them. Ivy is better in the greenhouse now, for the sake of protection from wet; but it is now time to get them shaken out and repotted, when they will be best out of doors for a month.

HARDY BULBS.—*A. B.*—Crocuses are lifted when in flower in order to get them into harmonious arrangements and remove any of the wrong colour that may have got mixed with the clumps, an accident of very common occurrence. The best bloom is to be obtained by taking up and planting every year. Even the common white Lily, which it is supposed should never be moved, ought to be taken up every season, in the last week of August or first week of September, and all the offsets removed from the flowering bulbs. The mischief done to bulbs of this kind is in disturbing them at the wrong season. Plant crocuses four inches deep, and one inch and a-half apart for a nice effect. If it suits the convenience of the planter, crocuses may be planted in clumps in the reserve ground, lifted in clumps when in bloom, lifted again when the bloom is over, and the bulbs ripened in the reserve ground, out of sight but not out of mind. This applies either to old clumps, which would be improved by it, or new ones, which would not be harmed, of course the rough handling a common labourer would subject them to would be very injurious; they must be lifted with care so as to avoid injury to the roots. Heat is necessary in propagating variegated Aly-sun in spring.—*R. H.*—The hardy species of *Althæa* are not particular as to soil. The best are *azurum*, *fragens*, *moly*, *roseum*, *rubellum*, and *triquetrum*. *Moly* is probably the invigorating herb mentioned under that name by Homer.—*P. Sinclair*.—The species of *Colchicum* should be planted either in August and September, just before they bloom, or in November immediately after it. The best is *C. autumnale flore-pleno*. *C. byzantium* has large rosy-lilac semi-double flowers. *C. autumnale album* is a pure white and very beautiful. Any good garden soil suits them.—*J. H., Todmorden*—The best named crocuses for forcing are—Sir Walter Scott, *Aletta Wilchaine*, *Doiville*, *La Majestueuse*, *Lilæus superbus*, *Mont Blanc*, *Pluto*, *Pride of Albion*, *Prince of Wales*, and *Queen Victoria*.

ROSES.—*A. B.*—*Aimee Vibert* may be propagated to any extent by layering, and that is the easiest and safest way to propagate any dwarf rose. Lay down a branch on the soil without breaking it, cut a strong peg and peg it down so as to see exactly what part of the branch is best placed for the tongue. Then remove the peg, take out a little earth with a trowel, cut a tongue on the under side of the branch, and peg it down firmly in the hollow, and cover the tongued part with the earth that was removed. Of course the leaves should be removed from the portion that is covered with the soil, and the growing end of the branch should be brought upright and fixed to a short stick, so that when the tongued part has made roots it may be cut away and potted as an independent and well shaped plant. It is as easily struck from eyes as any *Noisette*. To give air to eyes just starting choose the evening first; take off the bell-glass and put it aside to dry. Give the young shoots a light skiff from the syringe, and put the glass on again next morning before the lights of the house are opened. After being aired a few nights the glass may be left off all

day if the pan is in a shady place. There is no need to pot them off till they have nice roots. In propagating from eyes this summer we have cut them with about an inch of stem attached below the bud, so as to save the trouble of cutting them into shields, and we find they root as quickly but not so certainly. By our original method we did not lose five per cent., by our present method we lose twenty-five per cent., that is, mind, by dispensing with bottom-heat. If potted off as soon as the callus is formed, they should be at once put into heat.—*H. D. Pistor*.—The rose sent looked like *Safranot*, but being shrivelled, we will not venture to speak decisively.—*N. Beverly*.—Yes, decidedly; nothing like roses in pots for a tiffany house. In severe weather lay the pots down and cover them with loose dry straw, fern, or anything of the same dry littery nature. If you can push a few into bloom early in a warm house, and remove them to the tiffany when your fruit trees are in bloom, it will add to your enjoyment of the collection. The mistakes about tiffany are, building tight structures which the first gale of wind will rip to pieces, and expecting from such a light fabric sufficient shelter for soft-wooded plants. Starvation is often the cause of mildew in roses. Sulphur them by means of the *Boite de Houpe*, which you can purchase of *Burgess and Key* for half-a-crown, and at the same time give a good dose of water at the roots.

FUCHSIAS.—*H. C. Nash*.—Fuchsias require a little shade when in bloom, and then it is as well to discontinue syringing. Nevertheless, they will bear any amount of light if at the same time they are well ventilated, and they will enjoy water overhead, but it splashes the pollen about on the foliage a little. Our trial fuchsias have had such a blaze of sun on them this summer as ought to have killed them outright if all be true that is told in the books. You have probably found them all right by this time, but bear in mind that if you expose plants to intense sun they must have a thorough draught of ventilation at the same time, else scorching is sure to take place. In the case of a few fine plants getting punished as yours were, we should nip out all the blooms and stop all the shoots that protruded beyond the general outline of the plants, and wait for another bloom, which would not be long coming. Perhaps your house is too close for such weather as we have had this season.

MESSRS. MILNE AND Co., of Wandsworth Road, London, S., have forwarded their "General Descriptive Catalogue of Plants, Trees, and Shrubs," and a very interesting trade circular it is, comprising 36 pages of descriptions of the best camellias, azaleas, fruit-trees, ferns, rhododendrons, roses, stove and greenhouse plants, etc. Our readers know that this old established nursery maintains its character admirably, though not engaged in so fierce a race after novelties as some of its more modern competitors. Two new camellias are described in this list: *Panteca*, rich crimson, very double, bold handsome foliage, one of the best double red camellias in cultivation. This has been on the premises since the time of Messrs. Chandler, and is now sent out for the first time. *Amæna*, also a seedling of some years back; carnation striped, and likely to supersede *Princess Frederick William*.

VARIOUS.—*J. H. Ramsey*.—The photographs arrived safe; much obliged. We shall be glad if you can favour us with a few particulars of the mode of construction, and the plants most conspicuous for beauty in the collection.—*P. B. L., Barnard Castle*.—Received with thanks. Are there any other particulars you would wish to add?

THE
FLORAL WORLD
AND
GARDEN GUIDE.

OCTOBER, 1861.



INTER is fast approaching, and it is high time preparations were made for all the risks that accompany it. With such lovely autumn sunshine, the mention of the approaching winter may, to some of our readers, be as unwelcome as the display of the corpse at an Egyptian banquet; but that distasteful exhibition was sanctioned by the "wisdom" of the nation, to remind men of their doom; and if this presage of fogs and frosts appears uncalled for, we assure our friends we are prospecting solely for their good—for there are plenty of more cheerful subjects to which we might devote this space. Trusting not to share the fate of Lot's

wife, let us look back for a moment. Who cares to remember the last winter and its freezing horrors? But we can't forget it, for there are places yet blank about us with the date of the disappearance of their tenants marked upon them in characters which memory can translate but too readily. The winter before that was sharp, protracted, and it began early. Do you remember how the chrysanthemums were caught just at blooming time, and melted into pulp ten days before the earliest of the shows? The winter preceding that, the chrysanthemums were similarly scathed, and thousands of well-grown plants, supposed to be "safe enough yet awhile," were caught like delicate maidens on their way to scenes of revelry, and nipped by the night wind in the opening bud. For three years in succession the chrysanthemums have suffered to an extent that has actually diminished the popularity of the flower, and robbed us of certain accustomed festivities at the Temple Gardens and elsewhere that we used to count upon as certain as Christmas, Good Friday, and quarter day. Now, don't let it happen again. Prevention is better than cure, and in this particular case cure is impossible. Plants that have had daily watching and incessant care since November, 1860, are not to be ruthlessly sacrificed in November, 1861, through the momentary dropping of the thermometer a few degrees below the limit of safety. It is a fact to be remembered that, towards the close of the autumn, we usually have in

this country a smart visitation of frost, lasting but a short while, and attended generally with very marked benefits. It is one of the peculiarities of our climate; it makes a finish of the fall of the leaf, for down they come as soon as the rising sun melts the ice about their axils on the morning after one of these night frosts, and the under-gardener sees the end of his wearisome sweep, sweep. It stops the growth of trees that have pushed soft autumn shoots, puts herbaceous plants to bed for the season, and causes roses to harden off at once all their green wood, to be ready for the winter, and for sprouting freshly in the spring. But it is very likely to kill whatever vegetable fabrics are full of moving sap, and the chrysanthemums generally catch it in a style that makes the growers shudder. It has always been so, but was never noticed as a calamity until chrysanthemum-growing had been brought to high art principles, and the plants were too costly, reckoning the labour invested in them, to be left to chance it, as the old friends of the border and trellis were. As we never prophesy—not even after having pondered for hours over the works of Dr. Cumming—we will not predict a frost of four or five degrees about the 25th of this present October; but the cautious cultivator would do well by himself to prepare against it by placing his plants under shelter at once, and in such a way that they may enjoy all wholesome night dews, all beneficial rays of sunshine, and yet be made safe from frost at a moment's notice. If we had done no more than establish a safeguard for chrysanthemums in advocating tiffany-houses, we should have done sufficient service for one year's subscription from every one of our thousands of readers. Whatever other uses these houses may be applied to, they are just the right sort of places in which to bloom chrysanthemums, for if small, and therefore the more liable to admit the tip of Mr. John Frost's nose, or a film of his foggy breath, as he prowls about in the gardens, bent on mischief, still for such frosts as may be anticipated at the season of chrysanthemum bloom, the protection will be quite sufficient. The larger these houses are the safer they are, so those who need large houses and can erect them, will be best off, and may enjoy the bloom of their flowers in neat slightly structures, at very little more expense than the common awnings of sailcloth, tarpaulin, and prepared calico, with none of the mess and bother attendant upon the use of make-shifts. There is now plenty of time to make all right, but remember the old enemy of the gardener is prepared for action. Procrastination is the thief of time; let him not steal the moments that remain for setting all to order, and preparing against the worst, to insure the best that can be accomplished.

When the last fatal winter had passed over, what gloomy tales were told of trees and shrubs killed outright by the grip of the frost on their vital juices. Mr. F. Chitty, one of our keenest observers of causes and events in gardening, pointed out in these pages the real cause of the fatality, which he said was not the severity of the frost solely, but the frost combined with the gorged state of the sap-vessels, which burst like water-pipes when attacked by it. Mr. Chitty was right, the frost followed a cold, wet summer, and the trees were unable to bear it. Now it may seem superfluous to reiterate this fact at the close of one of the finest seasons of this century, but it is not so. There are thousands of potted fruit-trees in private gardens, not half ripe enough yet in the wood of the year to stand a severe frost without injury; and many of them that will not be apparently hurt by the severest winter, will give no fruit next spring,

though then they may be loaded with blossoms and pictures of delusive promise. Every season this is the case; trees that appear fit to carry heavy crops, and that actually begin to do so, cast them off in the process of stoning, and the hopes of the gardener are cast away with them. In too many cases the wood of potted trees is not half ripened at the close of the season, and this is another of the matters that demand attention in preparing for the winter. The reason why this happens, is because as long as the trees have green leaves on them, they have their regular supplies of water. Now, from the moment you have read this, withhold water from your potted trees altogether; never mind if their roots go dry as dust; never mind if they actually droop for want of it; but they will not do that now that their growth is completed. If you know them to be well ripened, the wood a nice clear brown colour, the buds not started but plump and hard, and the leaves touched with a proper autumn tinge, you have little more to do but to prepare to repot such as require it, and to give them all a surface dressing. But wherever there is the least doubt about the hardness of the wood and buds, desiccate and roast them. There is some warmth in the rays of the sun yet, and under south walls and wooden fences, the trees will harden off their wood rapidly, if water is wholly withheld. But rain may come—if with muggy weather, here and there a new shoot may start, such things often happen, they indicate a restlessness in the constitution of trees; a disinclination to go to rest peaceably, which is all against them for the next season. In such cases, lay them down, or lay them down if the weather be ever so favourable, on a dry gravel path, on a floor of tiles or bricks, or on the front stage of a greenhouse, the windows of which can be left open night and day. The sunshine and fresh air are the best agencies for the final elaboration of the sap; but where the circumstances are peculiar, to dry them off under glass is far preferable to making any risk out of doors of their future well-being.

Something may be done, where needful, to promote the ripening of trees in the open ground, especially if they are of manageable sizes. Bearing standard trees invariably behave properly in this respect, if the season will allow them; they are used to it; but bushes, pyramids, and dwarf espaliers will sometimes go on growing in spite of wind and tide. We have just operated on some bush plums which have thrown out huge shoots since August, and the object was not so much to ripen those shoots—which can be cut away hereafter—but to put the trees to rest; for it is impossible they should do their duty next year, if they will not rest at the close of this. Who is fit for a day's work after a night of activity in the open air and on foot? It is much the same with trees, and indeed plants of all kinds; if they do not rest in the season of rest, they cannot work when the time for work returns. Our process of soothing the refractory plum-trees to sleep, was by giving them a slight heave on one side with a four-tined fork. They will not resist such a narcotic as that; it will certainly act as an effectual sedative. But there must be no tearing or chopping at the roots. Open a hole on one side, to get good leverage, then get the fork well under them, and heave the ball over slightly, in the same way as if the tree was to be lifted. In a week thereafter, they will begin to shake off their leaves, and every glimpse of sunshine will aid in completing the hardening process proper to the season. As inquiries have come lately about the efficiency of Musgrave's slow combustion stove, we may as well add here, that we intend to go on with it in the

lean-to described in our original notice. Of course, it will not supersede a single yard of hot-water pipe, or square foot of furnacing, but where pipes and furnaces cannot be conveniently applied, it is the next best source of heat for portable houses.

NOTES OF THE MONTH.

DORCHESTER COTTAGERS' HORTICULTURAL EXHIBITION.—One of the most successful exhibitions ever held in connection with the Dorchester, Weymouth, and Cerne Association for the Improvement of the Condition of the Labouring Classes, took place in the Corn Exchange, on the 10th, and certainly the promoters have good cause to be congratulated upon the result which was displayed as following their efforts. Never has there been a better collection of vegetables brought together on any former occasion, while the potatoes, onions, and cabbages were far superior to any seen for some years past in the district. One cause of regret was the absence of the worthy president, Charles Porcher, Esq.; but his place was ably filled by the Rev. C. W. Bingham, and Capt. Kindersley was as usual indefatigable as honorary secretary. The judges of vegetables were H. N. Middleton, Esq., and J. F. Hodges, Esq., Mayor of Dorchester. In the council chamber an excellent lot of needlework had been sent for competition, and the office of deciding upon its merit was kindly undertaken by Mrs. Herbert Williams, Mrs. C. Michel, Mrs. C. Porcher, and Mrs. Warry. At two o'clock a large party met in the assembly-room for the purpose of witnessing the award of prizes. The chair was occupied by the Rev. C. W. Bingham, and among those also present were Major-General Michel and Mrs. Michel, Colonel Tapp, C.B., Colonel Pinney, Colonel Bingham and Mrs. Bingham, R. F. Wright, Esq., G. Warry, Esq. and Mrs. Warry, H. N. Middleton, Esq. and Mrs. Middleton, Mrs. Pattison, W. Eliot, Esq., J. F. Hodges, Esq., Mayor of Dorchester, Mrs. Balston, Misses Campbell, Rev. T. W. Knipe and Mrs. and Misses Knipe, Rev. J. P. F. Davidson and Mrs. Davidson, Rev. Prebendary Foot and Misses Foot, Rev. E. Ludlow, Rev. C. Tucker, Rev. A. Shirley and Mrs. Shirley, Rev. F. Newington and Mrs. Newington, Rev. E. Headlam, Rev. G. L. Nash and Mrs. Nash. — Ravenhill, Mrs. T. Baker and Mrs. Baker, Rev. Dr. Walters, Rev. G. Davis, Captain Kindersley, Rev. B. L. Watson, Mr. L. Luckham, etc., etc. The Chairman in the course of an interesting speech said:—"During the fifteen anniversaries of this Labourers' Improvement Society, there had not been more than one on which they had experienced any difficulty on account of the weather. Every heart would join him in saying that they all owed a deep debt of gratitude to the Lord of the harvest, in that he had given them such glorious weather for the gathering in the fruits of the earth in due season, and they ought to feel it more in the present year, because of the very threatening weather which preceded the harvest, and in consequence of the very wet July, which made the heart quake as they saw the fruits of the earth ripening on the ground, and as far as human eyes could foresee, the probability of a wet season. He was instructed by his good friends the judges, to inform them that they had never seen a more magnificent lot of potatoes, and generally of other vegetables, but particularly of potatoes, than on the present occasion. The number of competitors was also considerably more than on former years, and the judges stated that they had considerable difficulty in awarding the potato prizes, especially the fluke kidneys, the show of which he was told was splendid. He knew not how it was elsewhere, but in his neighbourhood they found that the fluke was one

which seemed most successfully to pass through that visitation of God's providence, the potato blight. No doubt some of them had seen in the papers various remedies for avoiding the potato disease. So far as he knew, all of these remedies had occasionally succeeded, but generally they were unsuccessful. If, however, they were determined to go on cultivating this plant to the same extent as hitherto, it behoved them to search what mode of culture was most beneficial in the prevention of disease. As far as his own opinion went, they had not arrived at any mode of treatment that was preventative. Some people told them that they ought to plant ship potatoes, but the experience of his own neighbourhood showed that the failure had been greater with them than with the others. Others said they should plant seedling potatoes, but if they chanced to see a seedling that had grown up by chance in their gardens, they found it was just as liable to be diseased as any other." The Rev. Prebendary Foot proposed a vote of thanks to Captain Kindersley as their honorary secretary. Captain Kindersley said "their monetary affairs were in a thoroughly satisfactory condition. They had been in that condition for some years past. Each year the subscriptions had covered the expenses of the year and a little more, so that they had no debt upon them; and, so far from it, they had a nice little fund in the Savings' Bank, ranging from £70 to £100." The meeting closed by the company singing the National Anthem, after which, one of the audience, evidently a working man, called for three cheers for their chairman, observing, "that he was a man who, when once his hand was on the plough, never looked back."

The schedule of prizes was planned expressly for the encouragement of thrift and industry, as will be seen by the following list of the subjects of competition:—Four best cultivated allotments in the respective districts, not being less than quarter acres, 10s. each; four best cultivated allotments or cottage gardens in the respective districts, being less than quarter acres, 7s. each; the cottager's wife or widow whose house and premises shall have been kept in the tidiest and cleanest state, regard being had to the number of children (the four best in each district), 10s. each. Twenty-four onions, twenty-four underground onions, carrots, beetroot, French beans, cabbages, red cabbages, savoy, cottager's kale, turnips, peas in their pods, beans in their pods, early potatoes, late potatoes, kidney potatoes; greatest weight of honey; best specimen of bread baked at home. The mechanic, labourer, or farm-servant, male or female, who shall have deposited, during the year, the largest amount of his earnings in any Savings' Bank. The young woman, the servant of a member, under twenty years of age, for living the longest in a family, either as domestic servant or dairy-maid, with a good character; the man, the out-door servant of a member, who shall have lived longest in a gentleman's service. The labourer (one in each district), for sending the greatest number of children the most regularly to the parish day school; ditto as to the parish Sunday school; the labourer for sending the greatest number of children the most regularly to the parish day and Sunday schools; the boy for continuing to attend the parish Sunday school as a pupil, for the longest period, being above the age of fifteen and under eighteen; the girl for continuing to attend the parish Sunday school, under the same conditions. Specimens of needlework, various.

Though we can ill afford the space, we gladly give prominence to the details of this interesting meeting, knowing they will interest many of our friends who are engaged in similar undertakings. A full report of the proceedings will be found in the *Southern Times*, of September 14th.

ROYAL HORTICULTURAL SOCIETY, August 27th.—*Floral Committee*.—A considerable number of interesting plants and flowers was produced. Mr. W. Chater, Saffron Walden, received First-class Certificates for hollyhocks Countess Russell and Ne plus ultra, the former a peach-blossom, the latter a light rosy purple; and the same award was made to Messrs. Downie, Laird,

and Laing for another variety called *Lady Daeres*, with pale, salmon-coloured flowers; *Invincible*, a salmon rose, and *Lady King*, deep crimson, from Mr. W. Chater, were commended. Messrs. E. G. Henderson and Sons showed, amongst other variegated pelargoniums, two beautiful varieties of the tricolor section, or those marked with a red zone or belt; they were named *Sunset* and *Mrs. Pollock*, and both received First-class Certificates. A Commendation was given to a pink flowered silver-edged sort called *Delicatium*, from the same growers. Of dahlias the following were commended:—*Maria Carter*, a white heavily rose-tipped flower; *Imperial*, a fine amaranth; *Fair Maid of Bath*, a delicate purple-tipped white: all from Mr. Keynes; and *Charlotte Dorling*, a bright light purple-tipped sort from Mr. Turner. Messrs. Low and Co., Clapton, showed a pretty new *Ancetochilus* called *Bulleni*, just received from Borneo; it had bronzy green leaves, marked with three distinct coppery stripes, and was awarded a First-class Certificate; as was a pretty creeping fern from the same source, sent under the name of *Arthrobotrya articulata*, but probably an undescribed species of *Polybotrya*. Another First-class Certificate was granted to *Pentstemon Lobbianus*, a pretty hardy sub-shrubby species of neat myrtle-like habit, with remarkably short gaping yellow flowers, shown by Messrs. Low. *Pollia purpurea*, a neat purple-leaved stove herb, from Messrs. Low and Mr. Bull, received a Commendation, as being a useful plant for small houses, in which it might be employed for grouping with leaves of other colours.

BANBURY HORTICULTURAL SOCIETY, August 27th.—The annual show of this Society was held in Dr. Wise's picturesque grounds, which were thrown open at one o'clock, and were thronged throughout the afternoon, the lovely weather assisting in no small degree to increase the attendance, which included many of the neighbouring gentry and clergy. The show of plants, flowers, fruit, and vegetables, was beautiful in the extreme, particularly the flowers, and the contributions were so numerous as to oblige the committee to have an extra tent, and to increase the size of the others. The bands of the Coldstream Guards and of the Third Oxon Rifle Corps played a popular selection of music during the afternoon in exquisite style, and afforded very great enjoyment to the company. The scene in the grounds was a very gay one, and the public are very much indebted to Dr. Wise for his kindness in allowing them to be used on such occasions. To his friends he and Mrs. Wise, as usual, very liberally dispensed their hospitality, of which a numerous party partook during the afternoon. The judges were—Mr. Robinson, Ritchings Park, Colnbrook, and Mr. C. Edmunds, of Chiswick House. In the evening a concert was given in the Town Hall by the band of the Coldstream Guards.

CRYSTAL PALACE, Sept. 4th.—The autumn show attracted an immense concourse of visitors, and the floral connoisseurs had but little occasion for dissatisfaction. The show was altogether a good one, though the effects of the long drought were visible in the thin condition of some of the hollyhock spikes. Dahlias and roses were numerously shown, but there was not much novelty among them deserving of note. The florists were more interested in the gladioli, perhaps, than in any other class of flowers, and those shown by Mr. Standish, of Bagshot, who took first prize, were evidently an advance on the excellence already attained by him. Mr. Standish is the leader in this department of cross-breeding, and deserves all the honours that have been heaped upon him. The gladioli shown by Messrs. Youell, Paul, and Cuttell, were, nevertheless, of high quality, and it is most satisfactory to note the honourable competition in the improvement of this increasingly popular autumn flower. To the miscellaneous public the dahlias were the great feature of the scene. Mr. Keynes came first in forty-eights, Mr. Kimberly second, Mr. Legge third. Mr. Keynes was also first in twenty-fours, and Mr. Turner second. Among the amateurs, our old friend Mr. Dodds, of Salisbury, was first with an exquisite set of twenty-four, among which were several of his own seedlings, the Rev. C. Fellowes was second,

and Mr. C. J. Perry third. Among the old flowers, *Triomphe de Peq*, Mrs. Edwards, Chairman, Colonel Windham, Earl of Shaftesbury, Duke of Wellington, *Cherub*, Andrew Dodds, Mrs. Church, and Lady Popham, hold their position well, in spite of the many recent flowers supposed capable of superseding them. Among the new kinds, the following show well, and are evidently destined to acquire permanent places in the lists—*Marquis of Bowmont*, pale lilac, tinted rose; *Masterpiece*, purple and maroon; *No rah Creina*, bronze yellow, tipped white, back of the petals suffused with rosy lilac; *Elegance*, white, suffused on the margin with light purple, and striped crimson, a very pure flower; *Joy*, pale lilac, tipped bright purplish rose; Mrs. Dodds, clear yellow and fine; Andrew Dodds, maroon purple, a very showy flower; *Beauty of Hilveston*, crimson, edged with lilac. There were some very promising seedlings shown, among them *Minnie Dodds*, from Mr. Dodds, of Salisbury, *Black Prince* from Mr. Keynes, and *Lord Derby*, from Mr. Pope, were the best. Asters seem to have attained to the fullest perfection possible. Certainly among the beautiful collections shown by Messrs. Betteridge, Besley, Westbrook, Lewis, and Sandford, who were the several winners in the German class, and Messrs. Sandford, Wyatt, Walker, and Hedge, who were the winners in the French class, there was no advance perceptible on the position attained three years since; there was at the same time no falling off, and the collections were the theme of eulogy by uninitiated and professional spectators alike. Roses were evidently exhausted by the heat and drought, and many of the best flowers were falling to pieces early in the day. The best stands were from Mr. Keynes, Mr. Laing, Messrs. Perkins, Mr. Cuttell, Mr. Hollingworth, and Mr. Dennis. The date of the show was evidently too late for hollyhocks, as the spikes were almost bloomed out, and the top flowers were not always good samples of what the first blooms had been. In the twelves Messrs. Laird got ahead of Mr. Chater this time, Mr. Bragg was third. In the twenty-fours, Messrs. Minchin came first and Mr. Chater second. Among the amateurs Mr. Glasscock took first prize for hollyhocks, and Mr. Plester second. Verbenas never make much effect on the exhibition table, nor is it possible to judge their merits by trusses. There was a charming stand from Mr. Perry, of Castle Bromwich, to whom we are indebted for several of our best bedding varieties, these took the first prize, the other prizes were awarded thus:—Messrs. Minchin, Mr. Patey, Mr. Grimbly, of Stoke Newington. There was a brisk competition in fruit. Mr. Henderson, of Trentham, took first prize for eight dishes, various; and first prize also for six dishes various. Pines and grapes were fine, the black grapes being of fine colour; peaches and nectarines were of average quality; melons better than ordinary; the green-fleshed melons of Mr. Bailey, of Shardloes, and Mr. Pottle, equal to any we remember. Dr. Cooper, of Slough, had a splendid red-fleshed fruit, which deservedly took first prize in that class. The ordinary orchard fruits were good indicators of the glorious season we have had. Among the miscellaneous fruits, there was a dish of Salway peaches, from Mr. J. Dwerrhouse, of Hookfield, which we have regarded with some interest, because this peach—one of the best new late varieties—has been so rarely exhibited since it was sent out by Mr. Turner. There were also some guavas, well ripened, from Mr. Henderson, of Trentham, and a beautiful collection of gourds from Mr. Salter, gardener to A. Sillem, Esq., of Sydenham.

BRIXTON HILL, Sept. 3rd and 4th.—This flourishing society held its summer show at Mr. Hills' Horticultural Implement Depôt, Brixton Hill, and it was eminently successful. We can only give the names of the principal prize takers, because of the many meetings that demand notice this month; this, however, will serve as a record for our friends in the district. Stove and greenhouse plants: first, Mr. More, with some novelties in orchids; second, Mr. Harper, with some fine begonias and ferns. Six fuchsias: first, Mr.

Gardener; second, Mr. Webb. Six fuchsias of one year's growth: first, Mr. Reynolds, with a beautiful lot. Gloxinias and achimenes: first, Mr. Webb; second, Mr. Harper. Lilliums: first, Mr. Webb. Six geraniums: first, Mr. Weston; second, Mr. Harper. Twelve cut roses: second, Mr. Brazer. Six roses: first, Mr. J. Monk, junr.; second, Mr. Cannel. Twelve dahlias: first, Mr. Emmery; second, Mr. Cannel; third, Mr. Fiveash. Six dahlias: first, Mr. Cannel; second, Mr. Emmery. Twelve French asters: first, Mr. Glover; second, Mr. J. Monk, junr. Twelve quilled asters: first, Mr. Glover; second, Mr. Fiveash. Six spikes of gladioli: first, Mr. Denyer; these were splendid. Twelve cut verbenas: first, Mr. Cannel; second, Mr. Harper; third, Mr. J. Monk, junr.; these were mostly new varieties, and good. Ornamental basket: first, Mr. Glover; second, Mr. Cook. Eight kinds of fruit: first, Mr. Brazer. Four kinds of fruit: first, Mr. Wall; second, Mr. McGenet. Black grapes: first, Mr. Cattermole, very fine, and cut from pots; second, Mr. Brazer. White grapes: first, Mr. Brazer, with Chaptal; second, Mr. Cattermole. Brace of cucumbers: first, Mr. Wall; second, Mr. Cattermole. An extra prize was awarded Mr. Cattermole for six fruit trees in pots; the plums and nectarines were very fine. There was a design for a flower-garden, which was much admired, and for which an extra prize was given, we think, to Mr. Cattermole. The place in which the show was held was not altogether the best for the purpose.

BURY FLORAL AND HORTICULTURAL SHOW.—The autumn show of the Bury Floral and Horticultural Society was held at the Athenæum, when a manifest improvement could be observed over the last show. One of the tables formerly devoted to stove and greenhouse plants had been removed, and the plants which formerly occupied it were placed on the centre tables, thereby adding greatly to the comfort of the visitors and to the appearance of the show at the same time. There was scarcely a department of the show where the objects shown were not really good. We may particularly instance Mr. Jonathan Openshaw's fuchsias and stove plants; Mr. H. Moody's lilies and pot roses; the annuals of Mr. Jonathan Openshaw, the Rector, and Mr. Walkden; the baskets of flowers and plants, in which a generous rivalry was apparent. The specimens of window plants, particularly the prize fuchsia of Mr. Walkden, also deserve mention. The dahlias, verbenas, and cut flowers were better than we recollect to have seen at any previous autumn show in Bury. Mr. G. Wike, the Rev. E. J. Hornby, Mr. R. E. Ashton, and the Misses Grundy exhibited some excellent specimens of the hot-house fruit. The apples of Mr. T. Grundy elicited the warmest encomiums of the visitors during the day. With respect to the vegetables, the cottagers' department rivalled that of Class 2, and in many instances surpassed it. The celery, carrots, and cauliflowers, taken as a whole, were decidedly superior. We are glad to notice this, for it shows that the cottage gardeners are fully alive to the advantages, not only of improved cultivation, but of procuring the best varieties on which to bestow their labour.

CULTURE OF THE ORANGE.

THE culture of the genus *Citrus* has been discussed by those of far greater experience than myself, but it does not follow that all has been said that need be said upon the subject; the following remarks, deduced from my own practice, I offer, under the impression that, in favouring any particular genus, it is often gratifying to hear, or to tell, the result of particular treat-

ment, or how it behaves under different circumstances.

First, with regard to underground treatment, I find that the orange-tree, as a strong feeder, requires a good hearty soil, but one that admits of a thorough filtration of air and water. I have seen plants which were constantly and regularly watered, and yet parts of the soil appeared

to be constantly dry; the cause of this was, the soil, when used, was too fine and close, which caused it to crack, and form, as it were, in lumps. The water, although applied copiously, ran through the cracks, doing the plant little good. My own way of preparing soil is as follows—two-thirds loam, as rough as possible, to one of peat. I object to dung, as attracting or breeding too many worms, and prefer applying it afterwards in a liquid state. The peat I chop with a spade rather coarsely, and rub it through a sieve. The fibre is capital stuff to place between the crocks and the soil. I then break some crocks, in quantity about a third less than that of the peat, and averaging from the size of chestnuts to that of peas, and adding about an eighth part of sand, mix the whole, loam, peat, crocks, and sand, well together; this makes a free, yet sound and durable soil. I have used shingle in the place of crocks, but the latter is preferable, as absorbing and yielding moisture quicker than the other, but charcoal is, I believe, superior to either. I have used an equal mixture of crocks and charcoal.

In draining, if garden pans are used, they should be chipped round the edges, or they will lay too close to the bottom, and the drainage be easily stopped. I prefer laying some broad pieces of pot on the bottom, and over these some coarse crocks, and over these again some crocks broken to the size of broad beans, covering the whole with peat fibre, which keeps the drainage clear.

In potting, the soil should be comparatively dry, to admit of the soil being pressed firmly down without clodding, and when finished, the surface should be equally firm with the rest, that is, so as to bear considerable pressure of the fingers without their sinking into the soil. In watering newly-potted plants, it is important that the whole of the soil be wetted through, and to effect this it is necessary to fill the pots up three or four times successively, and if at the time of potting the old soil is wetter than the new, it is well to wait till both are nearly consistent.

For a plant in full vigour it is advisable to give a layer of rotted dung on the surface of the soil, which keeps it cool and affords nourishment to the plant, and it is also advisable to give liquid manure in the growing season, the strength to be regulated by the condition of the tree and the time since it was potted, but from newly-potted plants it should be withheld. With regard to overhead treatment, except when in blossom, occasional syringing is beneficial, and keeps the foliage clean; but

while making its new growth, copious syringings ought to be given morning and afternoon, and more moderately during the summer, after the blooming is well over. Moderate shading is necessary to preserve a healthy greenness in the foliage, but it is equally necessary that the wood be well matured, if flowers are an object, and which too much shade would prevent; those I have seen flower best were not shaded at all, but the foliage wore a yellowish tint, which detracted from their beauty when not in bloom.

One of the chief objects in cultivating the orange-tree is for the fruit, which is not only highly ornamental in winter, but is useful for preserving, and in the manufacture of marmalade and other domestic uses.

The orange-tree, as is well known by all who have practised in the culture thereof, is not without its adherents in the shape of green-fly, scale, and red spider, but the latter only attacks it if kept too dry, and as dryness does not suit the plant, under proper treatment it will never be troubled with red spider. Green-fly attacks it only in the early part of the year, when about to make a new growth. It gets on the young and tender shoots, and if not destroyed in time the leaves will become deformed. The orange stands tobacco-smoke as well as any plant. The scale, a species of insect of the genus *Coccus*, is more permanent, and requires seeing to at all times of the year; and where a plant is in any way neglected, will soon cover it. I happen to be strongly of opinion that insects do not soon attack healthy plants, and where plants quickly become infested with them, there must be something wrong about the plant or its treatment; but the scale must be got rid of, and I know of no other way than taking each leaf separately, and wiping both sides; it is a long and tedious operation, and many a silent hour have I beguiled in the process, and can sympathize with the unwilling performer, and would do what I could to relieve him of it, which may be done by acting on the principle of prevention being better than cure.

In giving a plant such treatment as its nature requires, we maintain its vigour, and thus, as insects are slow to attack healthy plants, we in a great measure prevent the necessity for their destruction. It is singular, in the cultivation of the Citrus, to find a characteristic peculiar to itself. The leaves are apt to become smeared and blackened in a manner that will resist any attempt to wash it off with the syringe; it must be wiped off with a

sponge. I find it is best either to syringe the plant two or three times a-day for several days previous to sponging, and use a dry sponge, the smudge then comes off easily, and leaves a fine gloss on the leaves; otherways at the time of sponging the syringe ought to be kept in full play, or the pores of the leaves will be stopped, and the plant wear a dull appearance after the operation. What it is that smudges the leaves of Citrus, and makes an item in the cultivation of them unnecessary in that of most other plants, I do not pretend to know positively, but have my opinion, which is this: the scale with which the orange-tree becomes infested, although in its full growth as large as wheat bran, it is, when very young, all but invisible, and covers leaf and stem before it is noticed. The exudation of the insect in itself is all but colourless, but is of a gummy nature, and spreading over the surface, the dust and small particles of matter floating in the atmosphere settle upon this and become fixed, so that the syringe alone will not wash it off.

Although the plants under my own care are mixed up with a miscellaneous collection of plants, and they look tolerably well, and yield a fair annual supply of blossom and fruit, it is certain that, to grow the orange and lemon to perfection, it must have a house devoted entirely to it, because there are times when the treatment required by them is at variance with that required by other plants; for instance, at the time the orange is in blossom and requires plenty of air and keeping dry, the camellia is in full growth and should be

plentifully syringed; and if under a vine, the latter ought to be kept humid and moist. After blooming, the orange should be well syringed, but at this time, the camellia is about setting its buds and ought to be kept dry, so that treatment which one requires is ruinous to the other, and it is impossible to do both well together. The majority of these plants are grown in pots and tubs, which admits, for the more perfect consolidation of the sap, of their being placed entirely out of doors; but I believe this can be accomplished quite as effectually within doors, and that in an orangery, if the trees are planted in a border, they will bear as well as if in pots or tubs, and in every way may be grown as creditably, besides avoiding the unsightly appearance of the tubs, and bare stems, which are the most conspicuous part when the roots are above ground, but if the roots are sunk below the surface the head of the tree is brought to the level of the eye, and has a more natural appearance.

The myrtle-leaved orange makes an excellent standard, and being of a dwarf and compact habit does well as a frontage to the other sorts, and requires in every way the same treatment. The variety Otaheite Japonica is of too diminutive habit to make a border plant; it requires cool, shady treatment to induce it to bear well and carry a good foliage. It bears a small but sweet and thin rind fruit, and on the whole is worth a place, not only in every collection, but in every conservatory.

Stamford Hill.

F. CHITTY.

EARWIGS AMONG DAHLIAS.

THE prevailing practice of placing garden-pots on the tops of dahlia stakes to entrap the earwig, so injurious to the blossom of that plant, to me appears highly discordant with good taste, and yet these unsightly objects are exhibited in almost every garden and pleasure-ground, from the time of planting the dahlia to the end of the season.

Permit me to suggest, as an improvement, that the pot be placed erect on the ground, behind the plant, close to its stem, with a small quantity of wool inside, or anything else that would afford warmth and concealment to the insect which feeds in the night and secretes itself during the day; or, in place of the pot, a small piece of woollen cloth may be put between the

stem of the plant and the stake, or a bundle composed of half a dozen bean-stalks, five or six inches long, may be placed between the plant and the stake, or amongst the branches. Indeed, almost anything that would afford concealment to the insect, and at the same time not look untidy, would answer: of whatever material the trap is, it should be frequently examined, and the insects shaken out and destroyed. I may also mention that the caterpillar, which feeds upon the dahlia blooms, and secretes itself during the day between the stake and plant and in the bloom, may be entrapped by placing the old blossoms about the plant in the above manner.

MAJOR.

DESCRIPTION OF A PROPAGATING CASE.

THE accompanying outlines are intended to illustrate my experience in connection with the use of what is called the Waltonian case. I would state, at the outset, that I am quite unacquainted with the actual Waltonian case; indeed, I never saw one; but all my knowledge has been gained from your description in your excellent publication, and my own experiments. Necessity and experience induced me to make many alterations, which I am disposed to think are improvements, and it is because of this, that I have deferred till now making any communication on the subject.

Being in a country town, and having a small garden, I was led to take great interest in the cultivation of flowers; but I soon found that I could not do much without a forcing apparatus. I had a small greenhouse, but being badly contrived, and having no means of heating it, I found it impossible to succeed with that alone. In this difficulty, I met with that number of the *FLORAL WORLD* in which you give a description of the Waltonian case, and the mode of its operation. I saw at once that this was just the thing I wanted, and as the contrivance had already occurred to me, I was induced at once to try and carry out the plan. The difficulty I was now in was my great distance from London, and the not being able to expend quite so much as I found a case would cost, and, beside this, some alterations suggested themselves to my mind, which I was anxious to make. I resolved, therefore, to set to work in my own way. The woodwork of the frame seemed to me too heavy. The back, being of wood and not of glass, was cumbersome, and when in use, and placed near the window, obstructed the light. The tray being placed within the frame, whatever steam evaporated and condensed on the glass, must run down between the tray and the glass frame and be lost; added to this, the frame could never be made air-tight. There being but two lids, there would of necessity be some difficulty in regulating the amount of air to be admitted. These and some other alterations having been presented to my mind, I thought I would take your description and try, by some means, to construct a Waltonian case for myself. With this view I drew an outline, and went to

an ordinary tinman, a working man, and got him to make the tray and frame of zinc. I next got the glass cut to the size by a glazier, and I then set to work myself and fixed the glass in the frame, which was rather a nice operation; then painted the whole inside and out, three or four times; and having constructed the wooden stand myself, and fixed the lamp in its proper place, I set the whole to work, and I assure you it was with intense pleasure that in a few days I saw some geranium and other seeds popping their heads above the soil. This is the simple history of my Waltonian case, which astonished the country folks, and has also surprised many living in the neighbourhood of London. I have had some difficulty with the lamp, which I have altered several times, but I am now bold to say, that I think I have brought it nearly to perfection. Indeed, I can do almost anything with it. The entire cost of my case has been but 25s.

I will not trouble you further, but proceed at once to give you a description of the particular structure of the whole machine.

THE FRAME, Fig. 1, thirty-four inches long, seventeen inches wide, seventeen inches high at back, and ten inches at front. The whole is zinc and glass. The zinc frame-work is the same as the com-

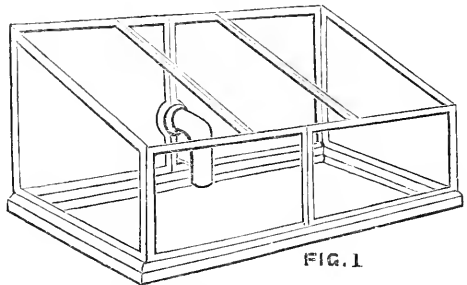


FIG. 1

mon hand-lights, being of zinc plate, bent as in Fig. A; mitred at the angles and soldered. The lower edge of the frame which lies upon the tray is bent out as Fig. B, and a strong piece of iron wire covered with zinc is at the mouth, and serves to strengthen it and keep the whole in shape, until the glass is



FIG. A.



FIG. B.

finally fixed, when it is as firm, if not firmer, than wood. Round the three openings at the top there is a ledge, upon which the covers rest when the frame is shut. The chimney to carry off the smoke is fixed to the frame in two places, being made to slant over a short piece of pipe on the tray, the bottom being below the sand in the tray, so that the slightest smell of smoke from the lamp cannot get into the case. The back, sides, and front being all of glass, the frame, when complete, is really very light and

which is condensed runs down into the sand and moistens it, so that less watering is required. The edge of the tray is strengthened with iron wire like the edge of the frame. The water tank and the pipe in the centre is as usual. My tank seldom wants replenishing, as little steam is allowed to escape from the pipe, the moisture being so much retained in consequence of my plan of having the frame to drop into the tray.

THE WOODEN STAND, Fig. 3. When

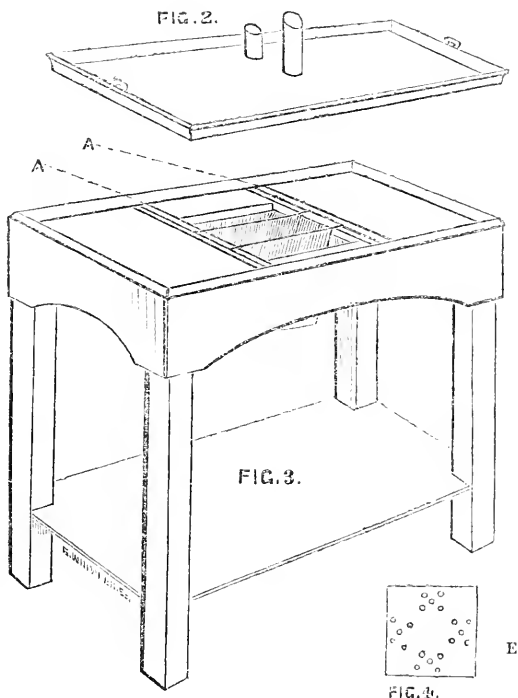


FIG. 3.—A, Iron bars which support the Lamp Case.

pretty; and the putty which holds in the glass only projecting from half to three-quarters of an inch, there is as much light as possible. I would here observe, that it is necessary to have small pieces of zinc soldered at intervals upon the frame, to hold the glass in place until fixed with putty.

THE TRAY, Fig. 2. This is a trifle larger than the frame, forasmuch as the frame drops into it. Thus, when in place, and filled with sand an inch deep, it is quite hermetically sealed; and the water

the tray has been placed on the wooden stand, then the frame is placed on the tray, care being taken to have the smoke pipe just over the piece of pipe on the tray; that the glass back be not jarred. The stand is of stout yellow deal, which may be painted any colour. The frame and legs are of two-inch square stuff, and then round the slides, at the top, deal boards are nailed, as shown in the plan, about eight inches deep at the corners, and less in the middle; and these rise about two inches above the floor upon which the tray rests, so as to

form a protecting ridge for the frame and tray, and this serves not only to keep them in place, but gives a finish to this part, and hides the lamp case. The flooring upon which the tray rests is covered with coarse flannel, which, being a non-conductor, keeps in the heat. Beneath the centre, and just below the bottom of the tank (indeed it rests upon them), are two bars of iron, an inch wide, and one-eighth of an inch thick; these hold the case which contains the lamp, which I shall describe hereafter. My stand, as you will perceive by the accompanying sketch, is between three and four feet high, which I have found the most convenient height, and this arrangement allows me to have a shelf at the bottom, about ten inches from the ground, upon which I place the cuttings, seeds, etc., to harden off before they are removed to the greenhouse, etc. The whole is upon castors, that it may be easily removed from room to room; and when not used as a forcing case, the upper part may be taken away, and in summer it serves as a stand for flowers, either in the room or greenhouse.

ZINC SEED PANS, Figs. 4 and 5, seven and a-half inches square, four inches high. E gives a view of the bottom, in which

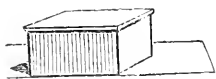
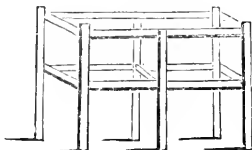


FIG. 5.

small holes, about an eighth of an inch in diameter, are pierced for the drainage. I have adopted these in my case, and find them to answer admirably. My case takes eight of the above size, which, being square, and all of the same size, I can shift them from place to place, as the seeds come up and require more light; and by placing glass on the top each one becomes almost hermetically sealed, and I can place other pots with cuttings etc., upon them.

FIG. 6.



I would here mention a contrivance which I have for making my case as useful as possible, by means of which I can fill it up to the top. I have two

skeleton wire stands, which, being rather less than half the length of the case, and two inches lower, stand against the back, and form shelves upon which I place the pots to be hardened off, removing them from the bottom to the upper shelf. They are of this form (Fig. 6).

The square zinc pans go between the legs in the lower part. Glass is placed on the shelves, and pots stand upon these, so that I have a little stand upon each shelf, on which the plants are placed, and have the greatest possible light.

I come now to speak of the lamp and its box.

The accompanying sketches give the exact shape and proportions of each, Figs. 7 and 8. I have had much trouble with the lamp, but I have now brought it to act with precision, and at small cost. I find a gallon of colza oil lasts me more than six weeks, and this when I have the frame in full action. The tube which receives the cotton is three-quarters of an inch long, and one-quarter wide. It is desirable not to have the cotton too tight, but sufficiently so not to slip through. The rim at *a*, Fig. 7, unscrews, the tube is taken out, and the cotton fixed in it, as in Fig. 9; it is then replaced. The rim at *c* is next unscrewed, and the oil poured in until it reaches the bottom of the supply tube; it is then replaced. The whole is then ready for lighting. The cotton, to burn well, should not be more than one-eighth of an inch high. My lamp requires trimming twice a-day—the first thing in the morning and the last thing at night. By trimming, I mean the cotton simply cut with a pair of lamp scissors, and then raised with a pin the right height. It is then fit for lighting. I give it oil once a-day, although it would go longer without. If there should be the least appearance of smoke, either the cotton is not cut straight, or it is too high, and must be lowered at once. The case is made of zinc. One strip of zinc about five inches wide forms the bottom, the two ends, and the pieces bent over at *A A*, Fig. 11, which rest upon the iron bars in the wooden stand, just under the tank. The side, *B*, is fixed with rivets; the door, *C*, is hung on hinges, these being made of zinc and riveted. The object in not having any part of this soldered, is to guard against any accident, and especially at night, when the lamp is left burning. Thus, should a cone of lampblack be formed, and become ignited, it would produce sufficient heat to melt the solder, the lamp would fall out, and the frame be ignited. I know this to be possible, as such an accident (short of burning the

wooden stand) did occur with mine, before I had perfected the lamp.

I have now given you a sketch of my experience, and the result of it, with respect to the Waltonian case. I have forwarded

taking a great interest in what I now consider the most delightful of employments. Last year I removed my home some 120 miles, and, therefore, found it impossible to carry many plants, yet, by

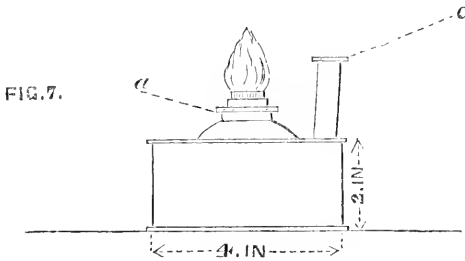
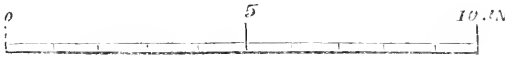


FIG. 8.

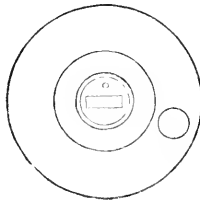
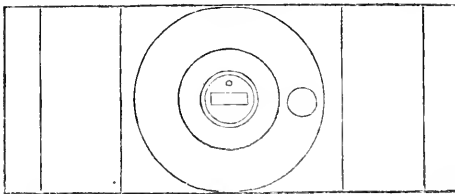


FIG. 9.

FIG. 10.



Scale, quarter of an inch to an inch. Fig. 9. The tube for the cotton removed from lamp. Fig. 10. Bird's-eye view of lamp-case and lamp.

them to you, thinking they might be of use to some of your numerous readers. If they should be but as successful as I have been, they will have cause to rejoice, and I shall have the pleasure of aiding them in

means of the case, I nearly supplied my new garden with plants; and this year I have already raised some thousands of seedlings, and struck many cuttings. All this has been accomplished with compara-

tively little trouble, for I have little time at my disposal, and very many things to engage my attention.

when it has reached the top, and the lamp is full; but should you exceed this, the contrivance which I have adopted of

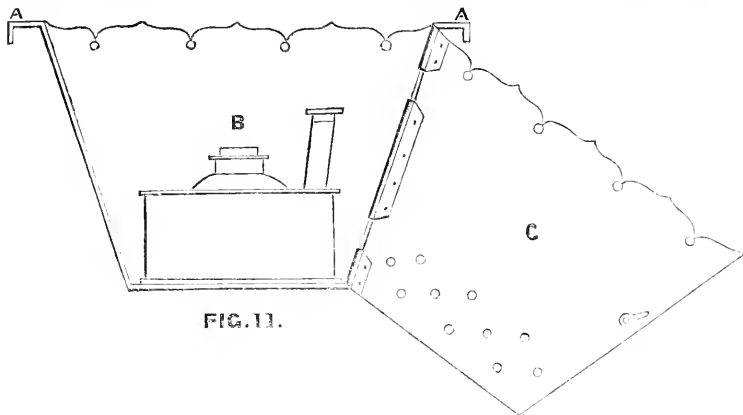


FIG. 11.

Fig. 11. AA, These rest on iron bars fixed in the top of wooden stand, and support it.

I ought to have said that I never have to complain of what I see some of your correspondents do, namely, the not being able to get sufficient heat; my difficulty is to keep down the heat in my frame. With two lids open, I can get, easily, 70°.

I would farther add that my lamp is the cleanest thing imaginable for a lamp. I always trim it in the dining-room, in which the case is at work. The supply tube being so much above the burner, no oil can get on to the screw to soil the fingers when unscrewing the top; and it has this advantage, also, that you cannot fill the lamp too full, so as to overflow, except you be the most careless of the careless. The tube is sufficiently wide to look down it, so that you see at once

doming the upper part under the wick, assists you, as it receives the excess and prevents it running over. There need not be the least spot of grease.

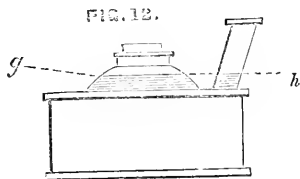


FIG. 12.

If you fill it to the point *h*, Fig. 12, it will not rise higher in the dome than *g*.
Richmond.
K. Z.

AUTUMN-PLANTED POTATOES.

WE have lately travelled over a considerable extent of ground in the south of England, and seen immense breadths of potatoes in the process of lifting, and it has been a delight to us to see the tubers remarkably clean, hard, well-ripened, and without a trace of disease visible over entire parishes and hundreds. On the dry lands of Essex towards the Thames valley, there is as fine a crop as to quality as was ever harvested since the potato has been in cultivation, but the quantity is rather less than an average, and the condition is

in exact ratio to the dryness of the ground. Some lauds now under our eye in the neighbourhood of Roelford, have had scarcely a drop of rain for three months past, collards are stunted, turnips a failure, beet good but small, whatever needs abundant moisture is poor, but the potatoes make up for all the losses in their superior quality and entire freedom from disease. Let us draw sound conclusions from good premises: moisture is ruin to the potato; a burning sun, effectual drainage, planting at wide intervals, these are the conditions

essential to the production of a useful crop; the burning sun we cannot command, but drainage must be secured, manure must be avoided or used with caution in a thoroughly rotten state, the plant must be got into growth before its strength is exhausted by the premature sprouting of the tubers, and the crop must be harvested in the driest weather that can be had for the purpose. Our hope is that we may yet use the potato as our forefathers did in the days when disease was unknown, and we shall not consider the space of a few columns wasted in bringing before our readers the facts on which future practice in the culture of the potato must be based.

Now there is one thing certain, over and above what we have stated as to the necessity for a dry soil, thorough exposure to the sun by planting at wide intervals, and generally the non-use of manure. It is this, that the less the potato is exposed to the atmosphere, the better for it. It is not in its nature to be used as we use it; that is, in its native climate as a wild plant, it is not kept in sacks under cover, or in clumps exposed to damp for six months in the year, and the disease being constitutional is obviously the result of some violation of the natural habit of the plant. We will not venture to say that the ordinary method of storing potatoes is the cause of disease. Where the most eminent authorities differ we may be diffident to hazard an opinion as entitled to any more respect than an opinion can claim, for the opinions of the ablest are often wrong, and the greatest error in all discussions is that of confounding opinions with facts. But we have a fact here, and it is this, that potatoes planted in autumn generally produce larger and better crops than those planted in spring, and the cause may be that being committed to the ground before the juices of the tuber undergo deterioration by exposure to the atmosphere, the plant has its proper vigour and grows in a manner consistent with its natural habit. Potatoes for culinary use improve by keeping; they become more mealy by parting with moisture, but the moisture which leaves them by evaporation is doubtless the life blood of the plant, and autumn planting saves it from being dissipated.

There are two methods of adapting the culture to what we consider the natural habit of the potato. The first is to leave them in the ground untouched the whole of the winter; if seven inches deep no frost will hurt them. They may be frozen through, and every diseased tuber will be thereby destroyed, but not a single

sound tuber, however large or small, will suffer injury. Potatoes, like apples, may be frozen without harm if in the dark until completely and slowly thawed again. But this method may be varied, the ground may be got ready for the next crop by deep trenching any time during September and October, and the potatoes may be taken up a few at a time, sorted for consumption and planting according to sizes, the best sets being those of good shape and not very large, even small tubers will do for sets if hard and ripe; thus the two operations may proceed together, one row at a time for each, and the potatoes then removed from this year's crop are transferred to the soil for next year's growth, without being exposed to the atmosphere more than from a few minutes to an hour or so. The rows should be not less than twenty inches apart for dwarf growers, and quite twenty-four or thirty inches for strong growers; the sets full eighteen inches apart in the rows, and to be covered seven inches deep with loose and friable soil which is not to be trodden on. The more freely the air circulates through the soil about the sets, the safer are they from frost, and it will settle by its own weight sufficiently without trampling, which is decidedly injurious.

If left in the ground all the winter, the crop should be dug during mild weather, very early in March, or even at the end of February, sorted at once, and the sets transferred to their rows without delay. They will lift as sound then as now, provided they are full seven inches deep; but if they are at a less depth than that, they may be injured; and therefore the completion of the work during September and October is far preferable, as it clears the ground, liberates the crop for sale and domestic use, allows of the planting being finished at a season when there is more time for it than in the spring, and enables the plant to put out roots where it is to remain and even to form tubers, which it will do long before the season arrives for the haulm to appear. Potatoes now greening on the soil for seed, may be disposed of in the same way, by planting at once; and we urgently recommend the practice, with the observation of a few precautions now to be briefly stated.

On sandy, chalky, and peaty soils of a dry nature, where the wet does not lodge in winter, and on deep loams thoroughly drained, autumn planting is the best system of culture. On wet heavy soils of all kinds, the planting must be deferred till spring. In autumn planting *whole* sets must be used, cut sets will not do, as decay will commence along the cut surface, and ex-

tend throughout the mass soon after the turn of the year. Weigh a few of the best looking sets, and make those weighing two ounces the standard for all. Those nearest the size of two-ounce tubers, say from one and a-half ounce to three ounces, will give the best crops, and cost less than larger tubers. The ground must not be trodden, it must be in good heart, but without recent manure. Where leaves are abundant, they may be used to cover the sets, and seven

inches of mould to be thrown over them. As to injury from frost, there is no fear of that, if they are covered sufficiently. The after culture should consist in frequent flat-hoeing, but the plants should not be earthed up at all; the practice delays ripening, without increasing the bulk of the crop. To be seven or eight inches planted, is as much covering as the potato can bear.

S. II.

THE PEAR FLY.

(Communicated to the Fruit Committee of the Royal Horticultural Society.)

Dexia nigripes? Walker; *Diptera*, pl. 12, 11.

"I TRUST it will not be uninteresting to the Fruit Committee if I call their attention to the history of a little fly which, without attracting the notice of the gardener, frequently destroys his crops of pears, and probably apples also; and if to a knowledge of the economy of the insect I can add a simple method by which its destructive effects may in future be prevented, or at least reduced in extent, I shall not deem the time mispent.

"To Henry Webb, Esq., of Redstone Manor, Reigate, a member of the late Pomological Society, I am indebted for several specimens of Catillac Pears, which he sent me on the 25th of June, 1860, in which he had discovered several small maggots, which caused the fruit to fall off even at that early period. I at once placed them in a glass and covered them over, and on opening it in February last I found two flies had been produced, a male and female, which I will endeavour briefly to describe.

"The female is about three-eighths of an inch long, appearing to the naked eye of a pale gray colour, and in general formation like a common house-fly; but under a lens its distinctive characters are at once perceptible. Head semi-orbicular, dingy white, with a black velvety mark in front reaching down to the antennæ, and terminating at the back in form of a crescent; antennæ dark, set with short spines and slightly curved inwards; eyes rich brown, oval, widely separated; thorax ovate, angular at the base, with five remarkable black spots, one on each shoulder and three below, divided by a scarcely perceptible suture; several small black dots between the larger spots, out of which stiff setæ issue, the whole bearing a close resemblance to ermine; scutellum semi-ovate,

centre white, with an angular black spot on each side, ending in a point with a stiff seta; abdomen four-jointed, dingy white, with three black spots on each joint, the centre one angular; wings dusky, long, oval, with five principal nervures and several transverse; legs black. Under a lens this is a very pretty fly, belonging to the family muscidae, of which Mr. Curtis enumerates forty-nine species in British entomology; but in the absence of figures and description I cannot identify it with any of them. It appears, however, to correspond with '*Dexia nigripes*,' figured by Walker, '*Diptera*,' plate 12, fig. 11, although he describes the thorax as quadrimaculata, yet shows five spots upon it exactly according with my specimen. The male is smaller, of a more common dingy colour and not handsomely spotted. The maggots are very similar to those of the blow-fly, but smaller. At what time the eggs were deposited, or in what part, cannot be precisely stated, but most likely when the pear was in blossom, or very soon afterwards, as I have frequently discovered the larvæ of Lepidoptera in the blossoms of other trees, and bred them until they arrived at the perfect state. I think it would be almost impossible to destroy these mischievous larvæ or the flies at this time; but if every gardener who is made aware of their destructive effects were carefully to collect the fruits which they have caused to fall abortive to the ground, and burn them, the species above described might easily be kept under; and by adopting the same plan throughout the season, many other equally injurious insects might be almost extirpated, and thus tidiness and usefulness would be seen linked hand in hand."

Cranford.

F. J. GRAHAM.

L 2

NOTES ON THE VARIETIES OF COMMON YEW

(Taxus baccata).

(Read before the Floral Committee of the Royal Horticultural Society.)

As many of our favourite evergreens, hitherto reputed hardy, have been seriously damaged or destroyed by the last winter's frost, we turn with increased interest to those which remain to us uninjured. Bays, evergreen oaks, arbutus, euonymus, laurustinus, common laurels, cypress, and, in some cases, Portugal laurels are killed. Araucarias, deodaras, and some other South American and Indian beauties have in many places complexions as brown as ground rhubarb; Phillyreas and more hardy evergreens are stripped of their leaves. But our native plant, the common yew, is safe; none of the varieties have a leaf injured in this valley of the Lea, where the thermometer on Christmas-day was five degrees below zero.

The common yew is, no doubt, well known to every observer, but perhaps the numerous and beautiful forms which have descended from it are as yet strangers to the many. It is these varieties which I would now attempt to describe. They are many in number, beautiful in appearance, and vary greatly among themselves. Neat, graceful, elegant, picturesque, sombre, massive, grand, are terms which may be appropriately used to one or the other of them.

It is my present intention to look at them from one point of view only, and that a popular one—their value as ornamental trees in garden scenery—and so regarded, they seem to fall naturally into four groups, viz. :—

Group 1.—*Varieties of a spreading habit*, of which the common yew is the type.

Group 2.—*Varieties of pyramidal or columnar habit*, of which the Irish yew is the type.

Group 3.—*Varieties of weeping habit.*

Group 4.—*Varieties with variegated foliage.*

Group 1.—VARIETIES OF SPREADING HABIT.

1. *T. BACCATA*, common yew.

2. *T. B. FRUCTU-LUTEO*, the yellow-berried yew. This is one of the most elegant; the pulp surrounding the seed is of a dull yellow colour instead of red, as in the ordinary kind. The growth is vigorous; the leaves are of a very pleasing green medium tint.

3. *T. B. NIGRA*. This is a striking plant of bold and rather upright growth, the leaves are of a bluish or blackish-

green. It flowers abundantly, and is very effective in the landscape, forming a somewhat sombre, but grand and massive tree.

4. *T. B. PROCUMBENS* forms a huge spreading bush; leaves bright green, the plant looked at as a whole, having a reddish appearance.

Group 2.—VARIETIES OF PYRAMIDAL, OR COLUMNAR HABIT.

5. *T. B. FASTIGIATA*, the Irish, or Florence-court yew, is a plant of rigid growth, columnar in form; leaves dark green. This plant is too familiar to require an extended notice, although very useful in formal gardening. Seeds of this variety produce for the most part the common yew, but some vary in form and tint.

6. *T. B. CHESHUNTENSIS*, is a very graceful variety, of pyramidal growth, the leaves small and closely set on the branches; the colour is of a bright glossy green. It appears to stand midway between the common and Irish yew, but is less formal than the latter and grows twice as fast. This variety was raised by me some years ago, from seeds of the Irish yew.

7. *T. B. PYRAMIDALIS*. This variety resembles Cheshuntensis in outward form, the leaves are, however, broader and shorter, and the bark of the young shoots reddish.

8. *T. B. NIDPATHENSIS*, the Nidpath Yew, resembles Cheshuntensis in the leaf, branch, and colour of the foliage, but is of stiffer growth, being columnar rather than pyramidal in habit, with a disposition to spread at the top.

9. *T. B. STRICTA* is similar to the preceding, but with smaller and paler green leaves; it is almost as erect as the Irish yew, and forms a compact dense tree. This is a seedling from the Irish yew, raised from the same batch as Cheshuntensis.

10. *T. B. NANA* is a neat plant of dwarf habit, and compact upright growth; the leaves of a dark and more glossy green than the common yew. It appears equally suitable for a single tree on the lawn, for planting in masses, for the shrubbery, or for a dwarf hedge in a geometrical garden. This also is one of my seedlings raised from the Irish yew.

11. *T. B. ERECTA* is similar to the preceding, but of larger growth, although with smaller leaves.

12. *T. B. ERECTA CROWDERI*, the va-

riety recently brought under notice by Mr. Crowder, of Horncastle, is of compact pyramidal growth, and approaches more nearly to erecta than to any other, but has smaller branches, and will probably not grow to so large a size. It appears of more regular growth than erecta, and may perhaps be considered an improved variety of it.

13. *T. B. ERICOIDES* (*eniper'folia*) is an interesting and neat little plant of dwarf growth, closely set with branches; the leaves are small, the bark red lish.

Group 3.—VARIETIES OF WEEPING HABIT.

14. *T. B. DOVASTONII* is a weeping variety, somewhat picturesque, the branches shooting horizontally to some distance from the main stem, and drooping at their points. The foliage is ample, of a dull dark green.

15. *T. B. JACKSONII* is a distinct and elegant weeping variety, with small light green leaves somewhat curled.

16. *T. B. CURVATA* is a handsome variety, with leaves of a pale dull green. The habit is diffuse, rather drooping, the leaves curled in the way of *Picea nobilis*.

Group 4.—VARIETIES WITH VARIEGATED FOLIAGE.

17. *T. B. VARIEGATA*, the Golden Yew, is a well-known plant of great beauty, well suited for planting in masses, and relieving the monotony of large surfaces of green. The gardens at Elvaston Castle derived

some of their celebrity from the artistic working up of quantities of this beautiful tree in contrast with the darker shades of green. I have heard it said, on good authority, that the Golden Yew is a male plant, but as I have seeded it, I strongly suspect that there are two or more varieties of too close an external resemblance to be distinguished. This supposition is strengthened by the fact that the offspring from seed retain the variegation of the parent, though differing slightly among themselves.

18. *T. B. ELEGANTISSIMA* is paler in colour, and of more erect and uniform growth than the last-mentioned. Both these varieties, if grown entirely in the shade, quickly become green, but regain their golden appearance on re-exposure to the sun. They form handsome formal plants when worked standard high on the Irish or common yew.

19. *T. B. 'SILVER VARIEGATED'* is a seedling from the Golden Yew, but which I never thought sufficiently distinct or attractive to merit a name.

20. *T. B. FASTIGIATA VARIEGATA*, the variegated Irish yew, is a sport from the Irish yew, with occasional silver leaves. The plant is of slow growth, and still scarce, but it is hardly striking enough to become a general favourite.

WILLIAM PAUL, F.R.H.S.,
Cheshunt Nurserie, Waltham Cross, N.

BEDDING FUCHSIAS.

We come now to the light and fancy kinds, and I shall have to condemn some very good ones, and recommend some of secondary excellence. It is in this section that the results of cross-breeding are seen to have a downward tendency as regards the strength of the plant, for, after the Duchess and the Queen of Hanover, the list of fuchsias suitable for bedding is few indeed.

COMPTE DE BAILLEAU.—Here is a fuchsia that nobody knows, and that no florist would tolerate, but a really fine thing for beds. It is not to be found in any modern catalogue, and no one in Stoke Newington knows it. Even the late Mr. Kendall did not, and to Mr. Oubridge it is a stranger. The other day, in a ramble over the garden of the Rev. — Vallance, at Southchurch, Essex, Mr. Sims, the skilful gardener there, pointed it out to me as one of the old useless varieties, and was rather startled when I told him it was one of my old friends, and unequalled as a bedder.

It is almost a self, the tube and sepals are clear fleshy pink, the corolla a bright rosy scarlet. It is only semi-reflexed, and in the mass has a very bright rosy appearance, distinct from all other fuchsias. It is of first-rate substance, very pure, and a most abundant bloomer; it is, in fact, rarely out of bloom, even if allowed to seed.

SCHILLER.—Tube impure red where it joins the berry, sepals impure flesh white, green at the tips, corolla rich purple, the base of each petal flesh; does not reflex well at any time, but better in hot, bright weather than during damp. It is a large bold flower, very distinct, and though very deficient in properties a first-rate bedder. My plants, now loaded with blooms, are all from April cuttings; they have stems half an inch in diameter. Our esteemed correspondent, "J. R." has sent me a few notes on fuchsias, in which he describes this as "a splendid light one, with a beautiful dark corolla, free, bold, and of good

growth." It is a nice plant in pots for ordinary uses, but not sufficiently pure for show.

FLOWER OF FRANCE.—Very neat habit, and grows well; neither drought nor excessive moisture affect it. The purple of the corolla is good, but the sepals have green tips, and the appearance of the plant is indistinct, and it will never give satisfaction as a bedder to those who have critical eyes.

MAID OF KENT.—Neat dwarf habit, free and pretty; corolla a nice pinky purple, but the sepals are tipped with green, and as a bedder it is only second-rate.

ROSE OF CASTILE.—Close neat habit, small bluish purple corolla. Ineffective, undecided, washy, and of no value; nevertheless, a fine variety for pot culture.

FAIREST OF THE FAIR.—Well known as a first-class fuchsia. The sepals are moderately pure, and lightly tipped with green; but as they reflex well, and show the clear flesh of the under side, the green is scarcely visible; corolla warm, rosy purple, very regular, stout, and bold. This grows as well as any in the open ground, but is very shy. I have used it as a bedder since 1857, and shall now give it up for varieties that bloom more freely. To do anything with it, it must be got on early. It matches with Maid of Kent in style.

FAIR ORIANA.—Tube and incurved sepals pure white, corolla rosy scarlet, a well-known and most beautiful variety, but very shy out of doors, and, therefore, not recommended.

CHARLES PALMER.—One of the old and discarded varieties that we cannot afford to lose. The sepals are flesh white, and have green tips, corolla rosy crimson; the sepals reflex well. In a small state, this has no merit, as the large bluish leaves give it an untidy look, but for standards there is nothing to beat it. Three years ago I had a row of four-foot standards of Charles Palmer at the back of a ribbon, and, in abundance of bloom and cheerfulness of appearance, it surpassed all other light fuchsias, new and old. Make sure of this, and give it a fair trial in large plants, and you will not be willing to part with it in spite of its defects.

DUCHESS OF LANCASTER.—What a delicate and lovely fuchsia this is, and yet how disproportionate the several parts of the flower. The narrow white sepals contrast charmingly with the cheerful rosy lilac corolla, and where it does well, there is nothing to beat it for a bed. But it does not answer everywhere, even on soils that suit fuchsias generally, and in that case there is a substitute in

QUEEN OF HANOVER.—The best of all the light fuchsias; sepals pure white, charmingly reflexed, corolla carmine; the flowers of amazing good substance, and most beautiful in a mass.

EMPRESS EUGENIE.—Not a first-class fuchsia under any circumstances. The sepals are rosy crimson, and the corolla white. Out of doors it looks most unhappy, and can very well be dispensed with.

CLIO.—One of Mr. Banks's best. The sepals are clear white, the corolla lively lake, very stout, well formed. As a bedder it is free, vigorous, and attractive.

ENGLAND'S GLORY.—Good, but there are others that do better in the open ground. The sepals are a moderately pure fleshy white, the corolla deep lake, stout and large. Those who have it may keep it, but it is not remarkably good.

GALANTHIFLORA PLENA.—This has not been fairly tried, and it would be unfair to condemn it. The corolla is white and double. It is a moderately good fuchsia in pots, and may yet prove useful as a bedder.

MARCHIONESS.—One of Smith's best. The tube is stout, sepals clear white, and boldly reflexed, corolla bright rose, stout, and well expanded. Most satisfactory as a bedder, being free in bloom, and vigorous in constitution, but must be turned out strong to do well with it.

MRS. STORY.—A charming variety for pots, but of no use out of doors. The sepals are crimson, and well reflexed, and the corolla a clear white.

KENDALL'S ELIZABETH.—Here is a gem for out-door work to beat Queen of Hanover. Judging them flower for flower, the Queen of Hanover is far ahead of it. In the Queen, the sepals reflex beautifully, but the corolla is very short. In Elizabeth, the sepals do not reflex beyond the horizontal line, and they are scarcely so pure. But the corolla is longer, neatly formed, plump in substance, and of a cheerful crimson rose; say about two shades darker than the coral-like corolla of the Queen. I know of nothing to surpass a good bed or circle of Kendall's Elizabeth; it was one of the best seedlings of our late lamented friend, who fell a victim to tetanus but a fortnight since.

VENUS DE MEDICI.—It would have been sad if Venus had deceived us when assorted with her kindred flowers. Happily this exquisite fuchsia is all that can be desired when turned out. It remains as pure in the delicate flesh sepals edged with lines of rose, and its clean deep violet blue corolla, as under the best management in pot culture. The proportions of this flower

are fine, though it is one of the smallest. If there is any fault, it is that the sepals are a trifle too long and do not reflex sufficiently. To enjoy the beauty of it, the best plan is to use it in small beds alone; when mixed with others, however symmetrically, it is likely to be outdone by more striking colours.

PRINCESS OF PRUSSIA, ACME.—These two have been lately described as the same. Let those who cannot see the differences test the matter by turning them out side by side, then Princess of Prussia will grow

and bloom as satisfactorily as any variety in our lists, but Acme will do nothing. Try them another way side by side in the greenhouse; there Acme will prove to be the best. Take Acme then for culture under glass, and Princess for open ground, and you will be doing best by the two best white corolla'd fuchsias we have.

FAIR ORIANA, STAR OF THE NIGHT, SILVER SWAN.—Three of Mr. Banks's choicest, but of no use at all in the open ground.

SHIRLEY HIBBERD.

OCTOBER WORK IN GARDEN AND GREENHOUSE.

APPLES to be carefully gathered as they ripen, and to be stored at once without wiping them. This is a convenient time to cut out dead wood.

AURICULAS to have plenty of air, and be protected against damp, which is apt to injure them as the weather grows chilly.

AZALEAS AND CAMELLIAS standing out should be got under glass at once, but still to have plenty of air. Those coming on for bloom will require frequent syringing.

CARNATIONS potted last month will require to be looked over to remove dead leaves, and to see that mildew is not attacking them. Keep them well aired.

BROCCOLIS in exposed places may be heeled over to be safe against the first frost; stir the ground between them, but do not earth up the stems.

CABBAGE sown in August to be planted out as fast as ground can be got ready. In sheltered places manure may be used liberally, but in exposed districts it may cause too free a growth before winter if the plants are to stand. The dry weather of August and September will probably cause cabbages to bolt next spring.

DAHLIAS require a good deal of care

now to keep them trim, and as flowers are getting scarce, let the dahlias have necessary attention to keep them gay to the last.

EVERGREENS planted now will make better growth next spring than those planted in February and March. Give orders at once for all trees and shrubs required that there may be no delay in obtaining them as soon as the nurserymen begin to take them up. All small subjects may be taken up at once in full leaf.

GERANIUMS newly struck will require to be kept rather warm to encourage the formation of roots; those that are strong in pots may have plenty of air and be kept rather dry to check growth.

HOLLYHOCKS of the best sorts to be propagated to keep up a good stock. They should be renewed by cuttings every year.

KITCHEN GARDEN must be kept clean, and a good hoeing between the crops now will do wonders to lessen the amount of weeds next year, as the autumn crop of groundsel, plaitain, etc., is now bristling through the grounds.

VINES breaking to be encouraged with a temperature of 60°. Pines will require 85° at least.

TO CORRESPONDENTS.

CATALOGUES RECEIVED.—"Hooper and Co., Central Avenue, Covent Garden, Autumn Catalogue of Dutch, Cape, and other Flowering Bulbs," contains useful cultural notes, and a very full list of hyacinths, tulips, crocuses, border, Cape, and other bulbs; also of books on gardening and miscellaneous goods. There is a description of Taylor's Patent Protector, which is likely to prove of great service for small collections of choice subjects.—"John Dobson and Sons, Hounslow, W., Descriptive List of New Pelargoniums, Cinerarias, Verbenas, Fuchsias, Pansies, etc." Messrs. Dobson are good judges, as well as good growers of soft wooded plants, and this catalogue is a description of the cream of their large collection, comprising

all the best flowers of the present season.—"E. G. Henderson and Son's List of Bulbs and other Flower Roots." A full and interesting catalogue, containing, besides the usual large assortment of early tulips, hyacinths, etc., some notes on new stove and greenhouse plants, some of which are of great promise, and on which we shall take occasion to make special remark shortly.—"W. Bull, King's Road, Chelsea, Catalogue of New, Beautiful, and Rare Plants." This is of more than average importance as a catalogue. Mr. Bull has made an impression on the horticultural public by his spirit and tact in gathering together a number of most attractive varieties, chiefly stove and greenhouse plants, many of them

remarkable for beautiful foliage; these are described and priced along with a selection of useful old subjects.—“Sutton and Sons, Reading, Catalogue of Fresh Imported Bulbous Flower Roots, Geraniums, Carnations, Roses, Fruit Trees, Kitchen Garden Seeds, etc.” Though a thin list made insightfully with headings in large black type, it is skillfully arranged for usefulness, and there is a list of annuals for autumn sowing well selected. The bulbs include all the good old sorts, but none of the new ones, so that for general purposes this is a *mustum in pareo*.—“Barr and Sugden, King Street, Covent Garden, Catalogue of Dutch and Cape Flowering Bulbs, etc.” Cultural notes are attached to each section of bulbs, and the list is decorated with engravings of Tye's Hyacinth Glasses.—“Ambröis: Verschaffelt, Ghent, Price list of stove, green-house, and miscellaneous plants.” It is rich in curiosities and choice conservatory subjects, and there is an enumeration of the camellias figured in the “Nouvelle Iconographie,” during the past twelve years.—“Veitch and Sons, Exeter, Catalogue of New and Rare Plants.” A short descriptive list of a few conifers and stove foliage plants of more than ordinary interest, invaluable to collectors.—“Charles Noble, Bagshot, List of Ornamental Plants,” especially rich in hardy shrubs, azaleas, rhododendrons, roses, gladioli, and conifers.

VINES.—*A. B. C.*—If your vines have borne well under the old treatment it would be foolishness to cut them away. If they have borne indifferently, and you propose to replace them with young shoots, it will be best to cut the old wood clean out, and thus throw all the vigour of the plant into the young wood, and if the young canes are already half-way up the house, you would on this plan secure a good crop next summer, and good strong wood for spurring in at the winter pruning. Let us repeat, if the vines have borne well, don't cut them down; you can still make something of the young shoots by denuding them of all their buds but the two or three top ones when the leaves have dropped, and laying them into large pots filled with rich soil, into which they will root and form fine plants next summer, with two or three fine bunches on each.

RHUBARB IN DECEMBER.—*Powdhu.*—Begin at once, select a few good roots, according to the supply you wish, dig them up, let them lie on the surface of the ground exposed to all weathers for a fortnight, then put them in pots or boxes, as most convenient, and place them in a warm cellar, or any other warm place, and you will have a supply at once. Take up and treat a few plants every three weeks in the same way until Christmas, and you will have a supply until that growing in the open ground comes in. A simpler plan would be to obtain a few barrowfuls of tan, and lay it upon the floor of a warm cellar or brick pit, or, in fact, any spare sheltered place, and plant your roots in it, the warmth of the tan will induce immediate growth. In this is obtained the rhubarb supplied to the London markets throughout the winter.

GLADIOLI AND VALLOTA.—*S. R., Tipperary.*—Was there any mistake about the gladioli? Did you grow the common sort, and at taking-up time mix your sorts together, and in some way lose your good ones and retain the common ones? Cannot account for the disappointment in any other way, as we have never heard before of gladioli degenerating. Let *Valloia purpurea* be taken out the latter end of March, and potted in five parts peat earth, and one part well-rotted manure or leaf-mould, and a very little sand, say one-twelfth, in well-drained pots, and set in pans of water,

and placed in the greenhouse or cool pit, and they will grow and flower amazingly. We had a pot of *V. purpurea* major, with six bulbs in it, three of which produced two spikes each, and three weeks from this date (September 23) the whole nine spikes were in bloom at one time, forming one of the most magnificent spectacles we ever beheld.

GARDEN FLOWERS.—*T. E. P.*—Verbenas are not at all particular as to the kind of soil they grow in, providing it is well trenched up and manured previous to planting, so that they may begin to root freely the moment they are planted; that is the great secret of obtaining a great quantity of vigorous bloom. The stems of gladioli should not be cut down when done flowering, unless the seed is wanted. Just the flower-spike may be cut off, but as in the case of every other bulbous plant, the foliage should be left until it dies of itself, because while there is a particle of life in it, it supplies nourishment to the bulb, enabling it to perfect itself, in order to its satisfactory development next year. When taken up tie five or six of them together by the stems, and hang them up in an airy shed, or dry room, for ten days or a fortnight, where the frost will not reach them; then clean them off, cutting off the stems an inch and a half or so from the bulb, and put them into paper-bags, keeping them in a dry closet, or similar situation, free from damp and frost, until the first or second week in April, when they may be again planted. Whatever your neighbours do, don't trust your better sorts of gladioli in the soil all the winter.

TROPEOLUM JARRATTII.—*J. B.*—This is now starting into growth, and should be shaken out of the soil in which it bloomed last summer, and potted in fresh rich soil, equal parts good turfy loam, and very old rotten dung or leaf-mould, and just sand enough to open it, and thoroughly well drained, and, placed in an airy greenhouse, it will continue to grow throughout the winter, and by the beginning of February will have acquired great vigour. Attention must be given to training as growth proceeds. We have been potting this plant to-day (September 23rd).

TRITOMA UTRARIA.—*Kemberton.*—This and its varieties require the simplest culture; and they like a deep rich soil, are perfectly hardy, and are propagated both by seeds and division of the plant, which generally produces abundance of offsets. These offsets, taken off after the plant has done blooming, potting them in well-enriched loam, and placing them in a cold pit, or cool greenhouse, and shifting on as they require, till the end of April, will make fine blooming plants next year. The writer of this planted a small circular bed with seven of these plants last April. The bed was prepared by throwing out the soil to the depth of two feet, then six inches of very rotten manure was thrown in, then a layer of mould of the same thickness, and the mould and dung mixed, and well incorporated with a fork, then more dung and more mould, till the bed was filled up to six inches above the level, to allow of its settling down to its proper level. Here the plants have grown amazingly, and each one has sent up two or more magnificent spikes of bloom. The somewhat untidy habit of the plant must be borne with, for the sake of the beauty of its flowers.

MILDEWED ROSES.—*A. B. C., Dublin.*—The specimen sent is seriously mildewed. This affection can only be dealt with successfully in its earliest stages; then frequent dustings with sulphur, and liberal watering the root will do much, but when once it has got ahead, the next best thing is to cut the mildewed tops off and burn them. We are quite certain that horse-dung used largely to manure roses is promotive of mildew.

The more glazed and hard the leaves of roses the less will mildew attack them; hence Chinas suffer the least, and some Noisettes, such as Aimée Vibert, are rarely touched with it. The Rev. W. J. Ratcliffe, of Rushton, one of the most successful rose-growers, attributes the mildew, so prevalent this season, to the last severe winter. He dressed his roses this year with refuse strong beer, mixed with liquid manure and six times the quantity of water; and also with Peruvian guano, mixed with twelve times the quantity of water. He has taken eight first prizes and one fourth prize this season, and that is a good proof of the safety of his practice. Drought has been as productive of mildew this season as excessive moisture has been in former years.

EAST WALL.—*J. W. S., Dunmow.*—The east wall will not do for peach, apricot, or nectarine in your climate. If you want a bit of fruit on the wall, plant Thompson's pear, or Morello cherry, or Jefferson's plum. Perhaps Cydonia Japonica, with its lovely flowers, would suit you better. As to the index appearing in the January number, new subscribers must put up with it: we cannot attain to such perfection in minute detail as to please everybody. If we publish it in the December number, it cannot be so complete or so correct as it is by deferring it a month. All the former numbers may be had, and also former volumes.

PORTULACAS KEEPING OUT FROST.—I have read in the September number of the *FLORAL WORLD* a letter signed "J. R. N.," saying that "a very healthy plant of the Scarlet Portulacca" had appeared in his garden, self-sown! I have two small beds in my garden, which have been sown for a few years past with Portulaccas. I have always treated them as tender annuals, which I supposed them to be, sowing them afresh every spring. Last summer, in consequence of the wet weather, they scarcely flowered at all, and I hardly imagined the seeds had ripened; at all events, I left them to their fate, and made no attempt to protect the soil from the intense frost and cold of last winter. This summer, to my surprise, nearly the whole of one bed, and some plants in the other, have reappeared; the plants are strong and healthy, flower very freely, and are of all colours. I know a garden in which the beds of Portulacca are preserved in the winter by covering them with cinders, but in this case nothing of the kind had been done, and what renders it more remarkable, of the seeds sent to me this year by one of the first nurserymen, only those of the Portulacca alba have come up at all. The soil of my garden is not warm, but the situation is sheltered, and not very low. Will you have the kindness to mention in your Notices to Correspondents whether some common lamp could not be used with advantage in a small cold pit during the winter months, as a protection to the plants from frost and damp.—*O. M. H.* [The question of a lamp can better be determined on the spot. Any cheap source of heat, which is not accompanied with pernicious fumes, will answer the purpose, if sufficient in power for the size of the place. We have often kept frost out of frames by means of rushlights, and once burnt composite candles by the dozen where a fluc had got out of order. Such a matter must be arranged by observation. One of the simplest and surest sources of heat is a large stone bottle filled with boiling water at night, but neither candles nor lamps, nor bottles, nor even flues, will always avail to keep severe frost out.]

FERNS AND MOSSES.—We have received two very attractive little books, "Rambles in Search of Ferns," and "Rambles in Search of Mosses," by Margaret Pluez, published by Messrs. Houl-

ston at one shilling each. They are in the (to us) unattractive form of conversations, which perhaps may render them all the more acceptable to young people; but as to the information conveyed, and the tinted pictures, these pretty books are entitled to our highest commendation. The illustrations comprise figures of about a hundred species in each book, and though they are not marvels of art, they are the most sharp and accurate we have yet seen in any shilling books. Many who are puzzled to name their ferns and mosses will find them useful.

CUTTING POTS.—*J. W.*—Pascal's pots have a rim into which a bell-glass is fitted. They are figured and described in the *FLORAL WORLD* of July, 1853. They may be obtained of Messrs. Hooper and Co., Central Avenue, Covent Garden.

COKE DUST.—*J. W.*—The tomatoes growing into it so freely may have been as much through its retention of moisture as any other cause. If you can obtain it at a shilling a cartload, it seems a pity not to turn it to use. The best way to use charcoal on the open ground is to spread it at the rate of a quarter of a bushel to every square rod, or perch, and dig it in immediately before planting a crop. Charcoal is a most effective fertilizer, and we see no reason why coke-dust, which is wholly carbon, should not be so too.

PLANTING ON CHALK.—*Subscriber.*—We should prefer the removal of the soil to the depth of 2 ft. 6 in., a bottom of about four inches of hard stuff, rammed down and covered with a coating of sand or cinders, and then good sound loam to fill up with for the planting. In removing the soil place it in samples if it varies much, reserving only that which you know to be good for the trees to grow in. In filling up again, mix the best of the top soil taken out with the new soil obtained to make up the deficiency, and keep the worst to dress the surface with. Save a sufficiency of the best and mellowest soil you have to fill in about the roots of the trees. Stations six feet square are generally marked out for the trees, and that is more than your circles of nine feet circumference. But your spaces will do very well for four or five years, and then they might be enlarged.

THERMOMETERS.—*Mr. G. Cox, of 5, Barbican, London, E.C.,* has forwarded descriptions of his maximum and minimum thermometers, which we know to be excellent instruments, also description of the "chemical weather-glass," which we also know to be a delusion.

SPERGULAS.—*R. P. B.*—The gardeners have in many places opposed the new turfing plants, through some foolish prejudice, on the principle of condemnation without trial. The more we see of it the more we like it, and our experiences with it as a subject of culture more than bear out former recommendations. Our sample of pilifera is now most beautiful, and being beside good grass turf is in the best possible position for comparison. All who see it say that it makes the grass look coarse, it is such a refined object in its close, neat style of growth. Saginoides is best adapted for dry, sandy soils, pilifera for good loams and clays. The more exposed the situation, the better for either of them. The best way of turfing is to cut it into small pieces, as it can only spread from the outer edges. This is a good time for planting, and watering will not be necessary if the roller is frequently used over it.

CRYSTAL PALACE.—*J. T. E.*—The bed No. 1 is a crimson minimum Nosegay, edged with a variegated the name of which we did not book. Bed No. 2 is Rubens, edged with Harkaway.—*W. Sutcliffe.*—The angle beds on the rose

mount with *Delphinium formosum* were managed in a way which may be imitated in any private garden. Between the *Delphinium* scarlet geraniums were planted, and the *Delphinium* trained down. Then as the blue flowers vanish, the scarlets take their place without loss of colour a single day. This is on the plan of chameleon planting proposed by Mr. Howlett in the *FLORAL WORLD*, 1860, p. 253.

SAGINA PROCEMBENS.—*J. P.*—This certainly makes a good turf, but it is very inferior to the *Spergulas*, owing to its coarse, gray appearance when in bloom, and its dull green hue at all times. Instead of sowing seed, we should recommend you to use tufts. *Spergula saginoides* is in Messrs. Carter's hands, and at their nursery at Forest Hill they have about an acre of it. The geranium came smashed and dried, and utterly beyond identification, which we regret. Send, as you propose, a cutting with a head of bloom on it, with a cutting of Sir Robert Peel fuchsia, and take our thanks beforehand. Why your fuchsias drop their blooms we cannot imagine, as you say they are well drained and have not wanted water. Perhaps you turned them out when pot-bound, and with bloom-buds on them. The effort of working into new soil will sometimes cause the blooms to fall, just as newly planted evergreens shake their leaves off as soon as they begin to work. For the other notes thanks.

GREENHOUSE.—*J. B.*—The temperature must depend on what the greenhouse contains; but for such mixed collections as are generally brought together, an average of 45° should be secured. Say, during the severest frost, not to go below 35°. During bright sunny days, plenty of air to be given, and no fire, unless the weather is frosty, and then, with sun, the temperature may rise to 50°.

FUMIGATING PASTILES.—*S. S. S.*—These are perfectly safe and very effectual. We should think two would be enough for your house, twenty-two feet by ten feet. They are manufactured by J. Neale, of Birmingham, and sold by all the leading seedsmen. The appearance of maggots in mushroom beds is often the result of gathering the crop by cutting, by which the stumps are left in the soil, and undergo decay. They should be gathered by a twist completely to the root, and a knife never employed. You had better destroy the old bed, and begin again, there is really no means of eradicating maggots. The other matter shall have attention.

FERNS.—*J. A. Chatteris.*—*Adiantum affine*, under a glass shade, will require to be kept moderately moist and aired two or three times a week; every day, if convenient, all winter. We do not know *Palmaria*, it cannot be correctly named. Your "*Ideantum*" we take to be the above.

NAMES OF PLANTS.—*N. P.*—Your plant is *Buddleia globosa*, a very nice shrub, which will probably bloom next year. The holly is *Madericensis*.—*G. B.*—The petunia was shrivelled up, but we could determine it to be of no special value, no better than hundreds of unnamed seedlings.—*T. E. P.*—The variegated plant is the variegated *Salvia pratensis*; the blue flower is *Aster amelloides*, or Cape aster.

"THE GARDEN ORACLE" for 1862 will be ready in the course of October, and will, as usual, contain a description of new plants introduced during 1861, and of novelties to be sent out in 1862. It will also contain lists of the winning flowers of the past year, and selections of the best flowers, fruits, and vegetables for decoration, exhibition, and general use. In addition, several novel subjects will be treated in a prac-

tical manner, so to furnish the reader with a faithful picture of the progress of horticulture, and of its prospects at home and abroad.

"BRAMBLES AND BAY LEAVES."—The new edition of this work is in the press; subscribers will receive their copies on the day of publication, and subscriptions may be forwarded either to the publishers, Messrs. Groombridge and Sons, or to the author.

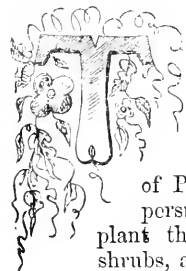
* A few replies to letters received at the last moment, were unavoidably postponed. Our correspondence increases so fast, that we must beg our friends to write early.

PRESERVING TOM THUMB GERANIUMS.—*A. T., Blackpool.*—In the first volume of the *FLORAL WORLD*, p. 199, Mr. Hibberd gave an account of the way in which he preserved a collection of geraniums, without the assistance of glass structures, while waiting for their erection in a new habitation, just after his removal to Newington. As that number (September, 1858) can be purchased for fourpence, it would be as well for you to obtain it, as the particulars of management are given at length, and it would be unfair to possessors of the whole of the work to repeat them. Many persons keep their geraniums in pots in windows very successfully, and some turn them out of the pots or beds and tie them in bundles, and hang them head downwards in a dry room, where they only require to be looked over occasionally, to remove any mildewed portions, and may be potted in March, and placed in the windows. But a better method is that of packing them in pots and baskets, with sand about their roots as described in the article named above. This keeps the roots in better condition, and prevents too great a shrivelling of the stem. Many who practise these methods lose a good many plants through neglect of a simple precaution and that is, to remove the whole of the leaves from the plants first.

OBITUARY.—We deeply regret to announce the death of our respected friend and neighbour, Mr. Alfred Kendall, florist, of Queen Elizabeth's Walk, Stoke Newington, one of the most successful market growers in the neighbourhood of London. Mr. Kendall died on the 14th, at the age of 65, and the circumstances of his death demand mention as a warning to gardeners. While occupied in his business he wounded a thumb of one hand, and allowed the wound to take its course. In a few days he began to feel, what he thought symptoms of a cold, and Mr. R. H. Cooke, one of the most skilful surgeons of the district, was sent for. Mr. Kendall then complained of cold in the chest and sore throat, but Mr. Cooke happened to discover that he had a thumb tied up, and on examining it, he saw at once that his patient was not suffering from cold at all, but was in the first stage of tetanus. He sought the co-operation of Dr. Hutchinson, and the thumb was amputated, being then in a dangerous state. The patient, in the meantime, sunk rapidly, and died a few days afterwards of lock-jaw. Had he sought advice in the first instance, the trifling injury to the thumb would, probably, have caused him neither pain nor danger; the neglect of it was the cause of his death. As a further remark on a subject of vast importance to gardeners, we saw an instance only a few weeks since, of a gardener, who, in splitting some laths, made a deep gash in the top of the thumb of his left hand, so as to cut downwards to the depth of one-third of the thumb-nail. He left his work and hurried to a surgeon. The wound was skilfully dressed, and healed in less than a week. How small a matter may suffice to determine our relations to time, and strike the balance between life and death!

THE
FLORAL WORLD
AND
GARDEN GUIDE.

NOVEMBER, 1861.



TREES in cities are once more the subject of discussion among the advocates of sanitary improvement and the promoters of horticultural science. While the *Gardener's Chronicle* is recording improvements in the public gardens of Paris, and indicating the mistakes of Prussian horticulteurs, the *City Press* is endeavouring to persuade the churchwardens, and other local authorities, to plant the ancient graveyards of London with suitable trees, shrubs, and flowers. The subject is one of immense importance to the gardening community at large, because so large a proportion are located in and about the great towns, and those inhabitants of mural districts, who are not immediately interested in practical horticulture, need to be frequently reminded, that gardens in cities are eminently promotive of the public health, and may be made immensely beneficial as means of recreation and instruction.

Perhaps about one-half of our readers are more or less habitual breathers of coal smoke, and properly anxious to see every plot of available ground, in the midst of houses, decently preserved, and made verdurous for the public good. There are two primary questions raised, irrespective of the minor ones which may be started. The first is, whether trees and shrubs are desirable as objects of utility in towns, irrespective altogether of what may be called the "sentimental" part of the subject; as, for instance, the inducement which public gardens offer to the inhabitants of towns to take healthy recreation in the open air, in preference to other pleasures injurious to health, and morally objectionable. The other question is, whether trees, and what trees, will thrive in cities, where the soil is so excessively drained, that it is scarcely capable of affording nutriment to species that require a deep, moist soil, and where the atmosphere is usually so loaded with soot, that the stomates of the leaves get choked, and the affair becomes a pursuit of vegetation under difficulties.

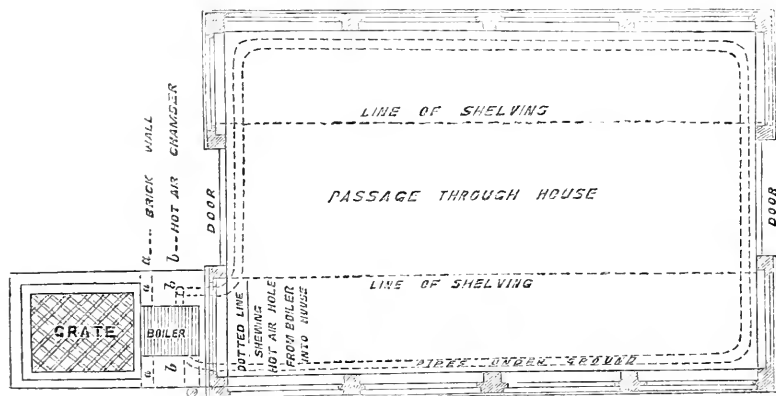
In Paris, public gardens are acquiring importance, not as accidents, but as integral parts of the plan of improvement which the Emperor has long been engaged in. The gardens of the great squares are admirably

planted, and carefully kept; the trees and shrubs are mostly well chosen; the flowers are selected for their gaiety rather than their rarity; and the people are freely admitted, an arrangement which contrasts strikingly with the padlocked palisades and grim walls that inclose the gardens of towns in this country. An additional feature of interest in the Parisian gardens is the liberal employment of stove plants, such as in our recent paper on tropical gardens we suggested for use in this country. At the Bois de Boulogne, Monceaux, and the Champs Elysées, *Caladiums* are used in beds and clumps, as materials of the ordinary furniture. *Caladium esculentum* is found to be the best for the purpose, and next to that any of the showy species with pendant leaves, those with erect leaves being liable to injury by wind. Another of their rich effects is produced by Cannas, which are largely adopted, and form magnificent clumps. Of eighty sorts tried by M. Barillet, the superintendent of the public gardens of Paris, those found most suitable, were *C. annæi*, *Warezewiczoides*, *liliflora*, *zebrina*, *discolor*, and *indica*. These are seen to best effect when planted in regular order, the tallest plants in the centre, and surrounded with some rich foliage plants of colours suitable for contrast; the common and useful grass (*Phalaris*) being largely used for the purpose. The Cannas are taken up as soon as the frost has touched their leaves, and stored in a cellar, but the *Caladiums* are kept growing all winter, at as low a temperature as will suffice for the purpose. In a recent account of the public gardens of Paris, by Dr. Lindley, he says: "For the maintenance of these gardens in a state of luxuriance throughout the summer, *great care is taken in the original preparation of the ground*, and constant attention to weeding and watering. The soil is all made, for the lawns as well as the beds." This is just the point to which we would call the attention of those who have to do with town gardens, public and private. The soil need not all be "made;" that must depend upon its texture in the first instance, but we are satisfied that one general fact is sufficient to account for all the failures, and that is, the common practice of planting in sour, exhausted, trashy soil, in which it is impossible for any tree or shrub, however robust in constitution, to make a single healthy root. The process of planting city gardens is rightly described in a leading article in the *City Press*, as consisting in "the opening of a hole, the jamming of the roots into it, and the treading of the soil over till it is as hard as a brickbat." On fertile soils already in good tilth in the open country, bad planting, though entitled to nothing else than condemnation, is, nevertheless, not always fatal to trees, the fresh air and the sunshine help them through, and in the course of time they throw out root fibres in plenty, and grow with vigour. Not so in towns. They need every encouragement there, by judicious preparation of the soil, and the abundant use, if necessary, of fresh turfy loam and good manure, both of which are easily obtainable at a very trifling cost beyond cartage.

Yet where the altered circumstances under which the trees are to live renders it imperative for success that no essential should be neglected, there is generally an utter neglect of first principles, and of course failure is the result, and the trees have to bear reproaches which ought to be cast on human folly. Gardening has its votaries in every town of Great Britain, and the majority of the best gardens are those to be found in the suburbs of great cities. Hence the question of planting the waste plots, the graveyards, and the squares of cities, is one that interests us all as a

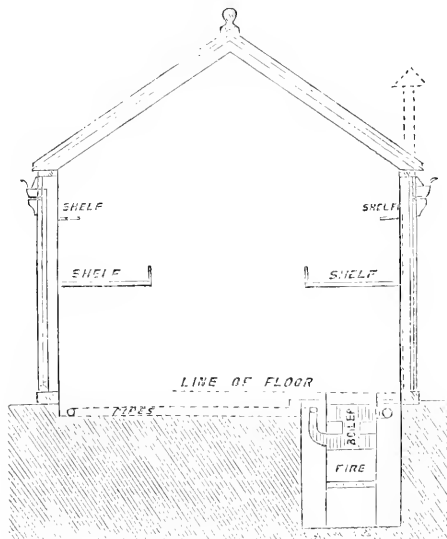
matter of art, but it much more concerns the health of city residents and the comfort of the poor, for whom at present no cheap and innocent relaxations are provided. If any imaginative scribe is in the mood to project a new Utopia, we commend to him the suggestion to describe the towns of the new empire as plentifully furnished with public gardens, all beautifully kept, where the poor mother may take her children to enjoy a breathe of the free air, a glimpse of heavenly sunshine, and the glow of flowers and verdure to charm away the curb and care of toil and poverty. As for the churchwardens of the City of London, they ought to be put into a crucible, and melted into dumps, the value of which might suffice to clean up and plant the dirty inclosures they have allowed to become a nuisance and a disgrace, instead of rendering them healthful and beautiful.

PORTABLE PLANT HOUSES are coming into use so generally, that we fully expect there will soon be an end put to the improvement of freeholds at the expense of tenants in this particular matter. The patent houses of Sir Joseph Paxton, as manufactured by Mr. Hereman, are to be seen in hundreds of gardens where there was not a square yard of glass in use previously to the production of these admirable structures. It is evident, therefore, that the unsatisfactory nature of the freeholder's claim to garden plants and structures operated prejudicially in preventing the tenant



adopting such sources of enjoyment as were within his reach, and in accordance with his taste, as the law of the land interdicted, without unreasonable sacrifice. Sir Joseph Paxton's patent has, therefore, operated as an encouragement to industry heretofore unemployed, for the manufacture of these houses by thousands is a matter of some importance in a national point of view. But it is still more cheering to see mechanical skill in action to outwit legal injustice, and so long as the gardener works in fear that some day or other he must give up all his investments of money and time for the benefit of somebody he neither knows nor cares for, so long must we encourage every invention which facilitates the pursuit of horticulture on a reasonable legal basis. In several cases it

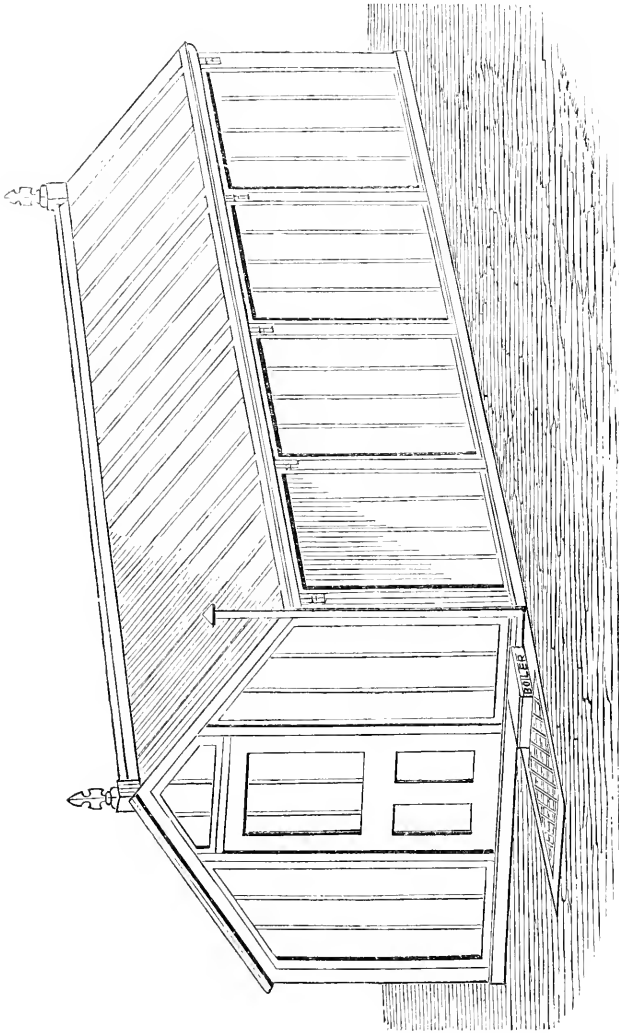
has been attempted to prove that Mr. Hereman's houses were "fixtures" in the legal sense of the term, and in every case the attempt has failed. They are as truly portable as common garden frames; they rest on the ground, or lean against walls, and instead of being fixed to the latter by hooks and eyes, as described by one of our contemporaries, there is not so much approach in them to the nature of a fixture as hooks and eyes might be alleged to afford. But while we are devising plans for building *on*, instead of *in*, the soil, and of heating without necessity of sub-superficial foundations, it would appear a desirable thing for the gardening community to bestir themselves for such a reform of the law as would institute a fair division of rights between tenant and freeholder. For a man to



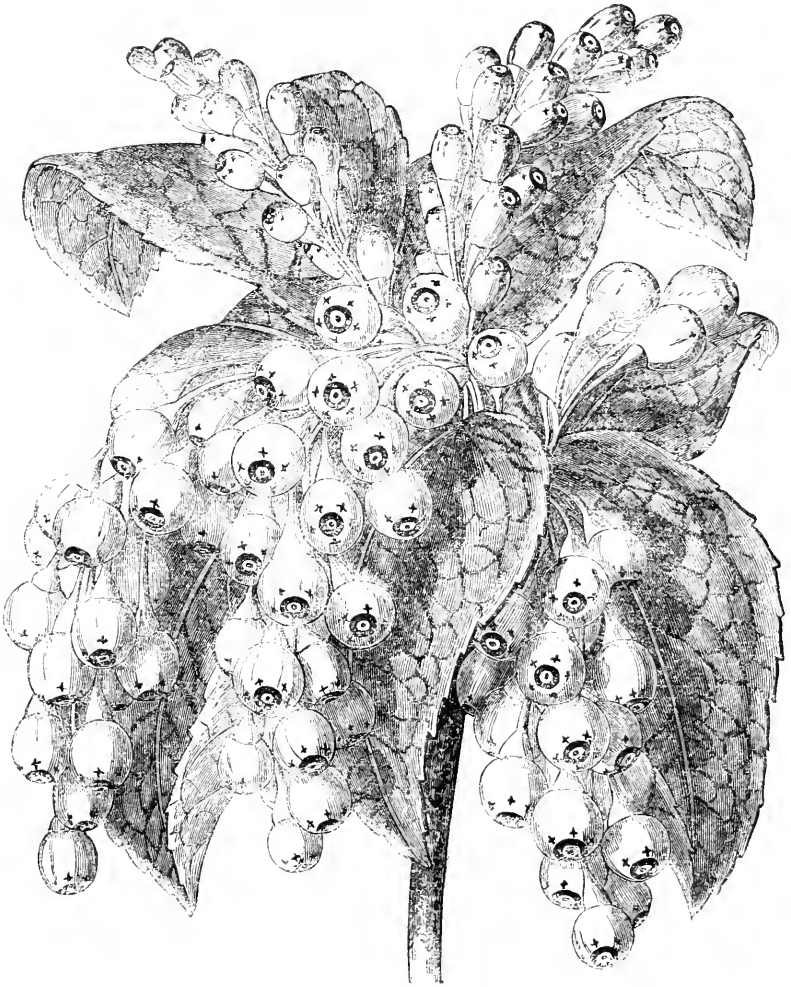
pursue a course of improvement involving great outlays, and then to hand over the whole to the freeholder on the expiration of his term, is neither just nor politic. It may be said he undertakes those improvements knowing the result. Yes. But if the result can be averted, how much greater inducement is there to the improvement of properties to an extent beneficial to the freeholder without being ruinous to the tenant. Legal right and moral right are often widely sundered, and we need, for the development of the resources of the country, for the encouragement of industry, and for the reasonable enjoyment of life on rented properties, a modification of the code, which is all in favour of one class at the expense of another.

To encourage the erection of portable houses, we have published several plans and descriptions in former pages of this work. We now have the pleasure of adding to the number, figures of the construction of the house described at page 267 of last year's volume. These explain themselves sufficiently to render it unnecessary to accompany them with any further details, and as they are drawn to scale, any one skilful enough

to make a house of any kind will be able to work from them without difficulty. The proprietor of this house, Mr. Lant, of Cotherstone, obtained the drawings for us from the builders of the house, Messrs.



Walker and Co., of Newcastle-on-Tyne. We may refer those who are now engaged in the construction of greenhouses to the papers at pp. 33 and 70 of the *FLORAL WORLD* of 1859, and pp. 192, 209, and 267 of the volume for last year.



EPIGYNIUM LEUCOBOTRYS.

NOTES ON NEW PLANTS.

EPIGYNIUM LEUCOBOTRYS.

A very ornamental-fruited cool greenhouse or conservatory shrub, two to four feet in height, with glossy oblong leaves in subverticillate clusters or zones, of a free vigorous growth and branching habit. The flowers are produced from the extremities of the shoots, in numerous terminal pendent racemose spikes of conical or pentagonally-formed white blossoms, which are

succeeded by gracefully drooping spikes of snow-white berries, very beautifully adorned at the tip with a jet black ring, having a black dot in the centre, and outward of each such ring are five small, distant, yet distinct jet dark ray-like spots, like jewels set round a ring.

It would perhaps be impossible to point out a more unique and elegant feature than is shown in the fertility of this extremely interesting shrub, which is so

hardy in its growth, and so compact in its habit, as to merit a place in every greenhouse and conservatory, for late summer and autumn decoration. Its numerous ruit-spikes may be aptly compared to strings of snowy star-tipped pearls, couched upon a surface of living emerald green verdure. [Now being sent out by Messrs. E. G. Henderson and Son. 21s. each.]

CAMELLIA "ETOILE POLAIRE."

A fine Italian raised camellia, of good habit, vigorous growth, and uniformly free bloom. The flowers are bright carmine scarlet, double, full to the centre, evenly imbricated, smooth in texture, and of stout substance. Each petal is marked with a central white bar or stripe. The constancy of its colour and stripe, a feature that distinguishes it from any known variety, will prove it a valuable variety for conservatory decoration, either in pots or for border culture. [Messrs. E. G. Henderson and Son. 21s. to 63s.]

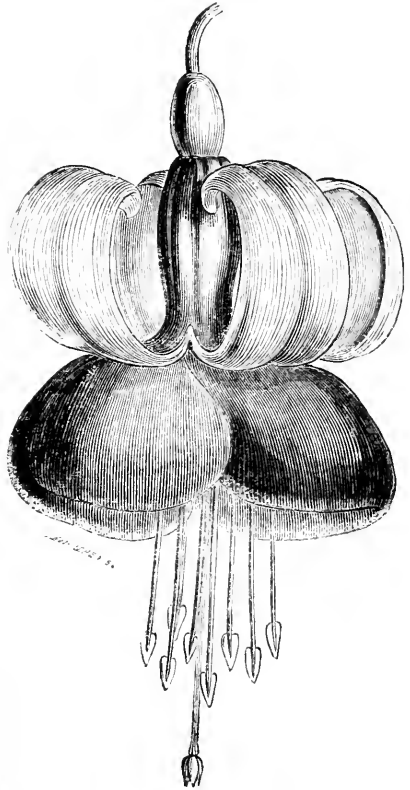
PENTAS ROSEA KERMESINA.

A very neat and ornamental-flowering hothouse shrub, of free growth and dwarf habit, with numerous terminal corymb-like clusters of rich rosy-red starry *Ixora*-like blossoms throughout the summer, autumn, and winter months. Its successional bloom and compact branching habit will make it a most desirable and useful plant wherever cut flowers are required, and it will also prove a handsome object for competition in provincial exhibitions. Generally in the trade.

FUCHSIA PRINCE LEOPOLD.

A large bold flower, with broad glossy carmine sepals, finely recurved, and showing a beautiful violet-purple, cup-shaped corolla. This received a first class certifi-

cate from the Floral Committee of the Royal Horticultural Society.



FUCHSIA PRINCE LEOPOLD.

CHRYSANTHEMUMS AT YEDDO.

This place is most famed in the vicinity of Yeddo for the variety and beauty of its chrysanthemums. At the time of our visit they were in full bloom, and most certainly would have delighted the eyes of our Salters, Brooms, and Birds had they found themselves so far away from Hammersmith, the Temple, or Stoke Newington. I procured some extraordinary varieties, most peculiar in form and in colouring, and quite distinct from any of the kinds at present known in Europe. One had petals like long thick hairs, of a red colour, but tipped with yellow, looking like the fringe of a shawl or curtain; another had broad white petals striped with red like a carna-

tion or camellia, while others were remarkable for their great size and brilliant colouring. If I can succeed in introducing these varieties into Europe, they may create as great a change amongst chrysanthemums as my old protégé, the modest "Chusan daisy," did when she became the parent of the present race of pompones. The Japanese gardener understands the art of chrysanthemum culture rather better than we do, and produces blooms of wonderful size. This is done by great care, good soil, and by allowing only one or two blooms to be perfected at the end of a shoot.—*Fortune's Notes.*

PROFITABLE GARDENING.

CHAPTER XXI.—SELECTION OF VARIETIES.

IN selecting apples for planting the choice will have to be determined by the nature of the object in view. For market purposes a few robust-growing, certain bearers, producing fruit of a showy kind will be preferable to a great variety. In gardens of great extent there will perhaps be little occasion for bush trees, as almost every variety will be grown to perfection on standards, and these give little trouble, are very fruitful after arriving at mature age, and need little or no pruning. It is in the small garden, where excellence and variety are of more importance than bulk, that bush trees will be found of most value, as furnishing a great variety, and affording agreeable recreation in their management. On the ground covered by one full-grown standard tree, at least twenty bushes may be grown, and when these are trimmed *en quenouille*, or distaff fashion, so as to have a contour similar to that of an Irish yew, they may be planted three feet apart, and still produce large crops of fruit.

The following selection is arranged to meet the various circumstances under which the trees may be planted, and as mere names are insufficient to guide persons either in the formation or improvement of selections, brief descriptions are added, not for purposes of identification, but to enable the planter to select the kinds best adapted to his purpose :—

TWENTY-FOUR ORCHARD APPLES.

Alfreton, K.—Large, round, skin light orange next the sun, greenish yellow in the shade; flesh yellowish, crisp, sharply acid. November to March. A fruitful variety and a strong grower. It makes a capital espalier for a west or east wall.

Bedfordshire Foundling, K.—Very large, pale green when ripe; flesh yellowish, acid. November to April. A handsome kitchen apple, but rather fitful in productiveness.

Bess Pool, K., D.—Large, conical, handsome; yellow suffused with red next the sun, flesh white, sugary,

vinous. Good from November to May. Rarely fails to give a good crop, and fit for any purpose.

Blenheim Orange, K., D.—Very large, ovate, yellowish, red next the sun; flesh yellow, sugary. November to June.

Court of Wick, D.—Medium size, very handsome, greenish yellow, orange, and russety; juicy, high flavoured.

Dumelow's Seedling, K.—Large, round, yellow and light red; flesh yellow, first-rate. November to March. Also known as Wellington and Normanton Wonder.

Devonshire Quarrenden, D.—This is the famous "sack apple" of the western counties, medium size, deep crimson, flesh greenish white, juicy, subacid, August.

Dutch Codlin, K.—Very large, conical and ribbed; greenish yellow with light tinge of orange, flesh white and firm, a first-rate kitchen apple, always bears, and will keep till Christmas.

Fearn's Pippin, D., K.—Full medium size, round and handsome; greenish yellow, russety, and bright red, flesh greenish white, sweet and richly flavoured. November to March.

Forge, K.—Medium, golden yellow, mottled with crimson, and dark red next the sun; flesh tender, juicy, and perfumed. Always bears well. September to February.

French Crab, K., D.—Large, dark green, brownish next the sun; flesh green, firm, subacid. Bears immensely, and will keep any reasonable length of time.

Gooseberry Pippin, K.—Large, roundish, bright green, flesh greenish, tender, gooseberry flavour, which it retains till May or June, and may be kept to the following August.

Hawthornden, K.—Large, ovate, yellowish green, reddish blush next the sun; flesh white, juicy, almost good enough for dessert. This never fails to give a large crop; it is not a strong grower, the New Hawthornden is more robust, and produces a

finer fruit, but is scarcely so prolific as the Old. If but one apple-tree could be planted in the garden, we would have the Old Hawthornden in preference to any other. September to February.

Hauwell Souring, K.—Medium size, greenish yellow, red blush; flesh firm, crisp, acid. No orchard should be without it. November to April.

Kerry Pippin, K.—Small, pale yellow, streaked with red; flesh yellow, firm, juicy and sweet. First-rate in every respect. September to November.

London Pippin, K.—Large, roundish, angular, with five protuberances round the crown; deep yellow; flesh white, subacid. Very fruitful. October to February.

Melon, D.—Large, lemon yellow, and light crimson, flesh white, tender, juicy, vinous, perfumed. One of the best American apples, generally fruitful. December to February.

Nonpareil, Old, D.—Small, greenish yellow, one of the hardiest, pale russet and brownish red; flesh tender, juicy and rich. January to May.

Norfolk Bearer, K.—Large, green, yellowish and crimson; flesh tender, brisk flavour. A prodigious bearer. December to February.

Northern Greening, K.—Medium, dull green, brownish red; flesh greenish, subacid. First-rate. November to May.

Sturmer Pippin, D.—Medium, yellowish green, and brownish red; flesh yellow, firm, sugary and rich. January to June.

Syke House Russet, D.—Small, roundish, greenish, aromatic, and highly flavoured. One of the best dessert apples. November to March.

Winter Pearmain.—K., D.—Large, conical, handsome, greenish yellow, and deep red; flesh juicy, sweet, and brisk flavour. October to April.

Yorkshire Greening, K.—Large, roundish, irregular, dark green, striped with dull red, pleasantly acid. October to February.

stocks, to restrain their growth and promote early fruitfulness.

Ashmead's Kernel, D.—Small, greenish yellow, and russety; flesh yellowish, crisp, juicy and rich. Likes a warm climate, and forms a fine pyramid or bush.

Beauty of Kent, K.—Very large, roundish; russety at the base, otherwise greenish yellow, streaked with red on the side next the sun. An abundant bearer, forms a handsome vigorous bush. October to March.

Braddick's Nonpareil, D.—Small, roundish, green tinged with yellowish brown and brownish red; flesh yellow, sugary and aromatic. A most abundant bearer, and fine for dessert. December to April.

Cellini, K., D.—Large, round, handsome; deep yellow, streaked and mottled red; flesh white, tender, juicy, rich flavour and aromatic. Good for every purpose; forms a fine pyramid or prolific bush. October to January.

Cornish Gilliflower, D.—Full medium size, oval, angular towards the eye; deep yellowish green tinged with red, with streaks of deeper red and russet; flesh yellow, rich, perfumed. Forms a fine bush; rather capricious as to bearing, but "the best of all apples." November to May.

Cox's Orange Pippin, D.—Medium size, roundish, greenish yellow streaked with red, with dark red next the sun; flesh yellowish, tender, juicy, flavour of Ribston. Forms a handsome pyramid and is a good bearer. November to January.

Court Pendu Plat, D.—Medium, round, deep red and greenish yellow; flesh yellow, rich, and briskly acid. Forms a fine pyramid or robust bush, and is a constant bearer. November to April.

Early Harvest, D.—Medium, round, clear yellow; flesh white, tender, crisp, juicy, and refreshing. Forms a spreading bush. One of the best early apples. August.

Early Nonpareil, D.—Small, roundish; deep yellow russety and with gray spots; flesh yellowish, juicy, aromatic. A fine old variety of first-rate excellence; may be

TWENTY-FOUR CHOICE APPLES FOR PYRAMIDS, BUSHES, OR ESPALIERS.

These should be grafted on Doucin

grown as a close pyramid or bush and kept covered with spurs from head to foot. October to December.

Franklin's Golden Pippin, D.—Small, bright yellow; flesh pale yellow, tender and agreeable, but neither rich nor aromatic. Forms a handsome half standard for a lawn, as when it becomes fruitful the weight of the fruit causes it to assume a weeping character, and it bears more abundantly than any apple known. It will also form a dense, spreading bush. Though a second-rate apple it is so distinct and pretty that it should have a place in every collection in a private garden.

Golden Harvey, D.—Small, round, yellow with russet, red next the sun; flesh yellow, rich, aromatic, first-rate. Forms a pretty pyramid or bush. We have bushes of it three feet high and of the same outline as an old gooseberry bush, which are covered with spurs on short, twiggy branches. February to May.

Golden Pippin, D.—Small roundish, deep golden yellow dotted with russet; flesh yellowish, brisk and rich. The very best of dessert apples. Forms a fine pyramid and is very prolific. November to March.

Juneating, D.—There are two varieties, the White and the Red; both are good, but the Red is the most robust grower and is suitable to grow in the orchard. The White forms a neat bush and produces a smaller fruit. Good bearers and excellent dessert fruit. July.

Hubbard's Pearmain, D.—Small, yellowish green and faint russet; flesh rich, sugary, and aromatic. Will never disappoint. Forms a fine bush or half standard, and is a favourite Suffolk apple. November to May.

Irish Peach, D.—Medium, roundish; yellowish green dotted with brown, dull red next the sun; flesh white, tender, juicy, and rich. A first-rate summer dessert apple, ripe in August.

Mother, D.—Large, deep yellow, highly coloured, veined and mottled with crimson; juicy, melting, and excellent. One of the best American apples, which are generally more tender and easily digestible than our

favourite English varieties. This requires a warm situation and may be grown as an espalier, pyramid, or bush. October to December.

Newtown Pippin, D., K.—Medium sized, yellowish, with crimson or red blush; flesh juicy, tender, aromatic, delicious. This also requires a warm, high position to have its proper flavour, and is then one of the finest apples grown. It forms a handsome large bush, and it is worth a wall in exposed districts. As an example of the influence of locality, on our cold clayey soil it rarely attains its proper flavour; but a mile away, on the high ground of Stamford Hill, the Newtown Pippins are the finest we ever tasted.

Manx's Codlin, K.—Medium, pale yellow flushed with red; flesh yellowish white, perfumed. Unequalled for kitchen use. Forms a compact and most prolific pyramid. September to December.

Lord Suffield, K., D.—Very large, nearly white, with slight tinge of red next the sun; flesh tender, juicy, briskly flavoured. Forms a spreading bush, and excellent to train on espalier wires. August to November.

Nonesuch, K., D.—Large, greenish-yellow, striped with dull red; flesh pleasantly subacid, not a first-rate dessert fruit, but, like Lord Suffield, may be used on an emergency. Is much esteemed for apple jelly. Forms a fruitful spreading bush.

Northern Spy, D.—Large, conical, angular, yellowish streaked with crimson on the side next the sun, long stalk; flesh white, juicy, and delicious. A fine American apple, very fruitful, and suitable for a large pyramid, or orchard tree, but will not form a close bush.

Reinette du Canada, D., K.—Very large, conical, flattened; greenish-yellow, brown next the sun; flesh firm, juicy. A noble dessert fruit. Forms a spreading bush. In good condition from April to end of June.

Ribston Pippin, D.—Well known as the king of English dessert apples. Usually grown as a standard tree, and on warm, dry soils, thrives in the orchard; but the frequent complaints of its tendency to canker, has

led to its more general cultivation in the form of pyramids and bushes, as these can be annually or biennially lifted, which keeps the trees healthy and fruitful. Having grown it in the form of a bush, for several years past, we can recommend it as readily forming a bush *en quenouille*, clothed with spurs to the ground, and producing fruit larger and as well flavoured as standard trees. In cold climates this fine old apple is worth a wall. December.

Waltham Abbey (Golden Noble), K.—Very large, globular and handsome; clear bright yellow; flesh tender; agreeably acid; when cooked melts into a rich amber pulp, and requires little or no sugar. Too robust for a bush, but fine pyramid or half standard.

* * As dessert apples predominate in the above list of dwarfs, the following Kitchen varieties may be added:—Bedfordshire Foundling, excellent for espaliers; Blenheim Orange, espalier or large bush; Cox's Pomona, espalier or neat bush; Dumelow's Seedling, pyramid; Keswick Codlin, robust pyramid; Forge, pyramid; Fearn's Pippin, pyramid or espalier; Gooseberry, pyramid; Hawthornden, bush or espalier; the most beautiful of all apples when in bloom, and, therefore, a suitable plant on a lawn. London Pippin, bush; Norfolk Beefing, strong bush or diffuse pyramid; Winter Pearmain, pyramid.

HARDY APPLES FOR EXPOSED SITUATIONS ON THE EAST COAST AND NORTH BRITAIN.

Dessert.—Devonshire Quarrenden, Early Julien, Kerry Pippin, Nonesuch, Summer Strawberry, Winter Strawberry, Franklin's Golden Pippin.

Kitchen.—Carlisle Codlin, Hawthornden, Keswick Codlin, London Pippin, Manx Codlin, French Crab, Tower of Glammis, Yorkshire Greening, Winter Colman.

* * * In exposed places, many of the choicer kinds may be had with the assistance of a wall, and a few are worthy of culture in the orchard-house.

SELECT LIST OF PEARS.

B., bush; *O.*, orchard-house; *P.*, pyramid; *W.*, wall; *H.*, hardy.

Those marked H. are excellent for a small collection, requiring no protection, and forming fine pyramids or bushes on the quince, except where otherwise stated. Most of the others require protection, while in bloom, either by screens of hexagon net or tiffany, or in the orchard-house.

Alexandre Bivort (Esperen), P., B., H.—Medium size, melting, rich, and exquisite; prolific bush. December and January.

Alexandre Lambré, P., H.—Medium size, melting, excellent. Forms a handsome and vigorous pyramid on the quince. December, often till February.

Alexandrina, P., H.—Medium size, handsome, melting, early; is perfectly hardy; forms a handsome pyramid. September.

Baronne de Mello, P. H.—Medium size, hardy, melting. Forms a compact ornamental pyramid. November. This pear is identical with Beurré Van Mons.

Bergamot, Gansel's, W., O.—Large and handsome, very slow in coming into bearing, unless double worked on the quince. Perfumed, melting. October.

Bergamotte d'Esperen, P., B., H.—Medium, late, melting. Forms a handsome prolific pyramid or bush; requires a wall in wet or cold climates. March to May.

Beurré Berckmans, P., H.—Large, vinous, sugary, perfumed, exquisite flavour. Best on pear. December.

Beurré Bose, O., W.—Large, delicious, half melting. Requires a warm soil and situation. Best on the pear; if on the quince must be double worked.

Beurré, Brown, O., W., B.—Large, excellent. End of October.

Beurré, Clairgeau, H., B.—Large, handsome, melting, juicy, not always rich. Best on the pear, and forms a fine pyramid; preferable as a bush on account of its large fruit. November.

Beurré, D'Aboise, H., B., P.—A hardy variety of Brown Beurré.

Beurré d'Areberg, P., H.—Me-

dium, delicious, melting, forms a handsome prolific pyramid. Orpheline d'Engheim is a variety of this pear equally good, less vigorous habit; a most prodigious bearer as a dwarf bush. December and January.

Beurré d'Amanlis, P., B., H.—Very large, melting, one of the best autumn pears. Not particular as to soil. End of September.

Beurré Diel, P., O., W.—Very large, often weighing sixteen to twenty ounces, melting, and excellent; forms a diffuse pyramid on the quince, on which it succeeds admirably, but it is better as a bush. We never can get fruit on it near London without protection. December.

Beurré de Rance, B., H.—Large, late melting, and insipid from a wall; but on the quince in the open ground its flavour is quite exquisite. Requires double working, and forms a better bush than a pyramid. March to May.

Beurré, Easter, B., H.—Large, melting, perfumed; insipid from a wall. Best on the quince, and forms a beautiful bush. January to May.

Beurré Giffart, B.—Medium size, melting, juicy, delicious noyau flavour; one of our best early pears. Middle of August.

Beurré Goubalt, B., H.—Medium, melting and excellent, "wonderfully prolific when worked on the quince; better as a bush than a pyramid." Middle of September.

Beurré Hardy, P., H.—Large, melting, vigorous grower on the quince. October.

Beurré Sterckman, P., W.—Medium size, melting pear, requiring a wall in cool climates. Jan., Feb.

Beurré Superfin, P., B., H.—Large, excellent, melting. Tree thorny when young; forms a vigorous pyramid or prolific bush. End of September. "This pear is seldom eaten in this country in perfection, owing, I think, to its being cultivated as a wall pear, its flavour is generally flat and insipid; in France it is very popular, always delicious, and keeps longer in spring than any other melting pear. A good method of growing it would be to plant it in 15-inch pots, keep the trees in the orchard-house

till the middle or end of June, and then place them out of doors in a sheltered sunny place, or near a wall with a southern aspect, to ripen their fruit. The trees should not stand nearer than two feet from the wall."—Rivers.

Bon Chrétien (Williams's), P., B., H.—Large, perfumed, melting; should be gathered before it is ripe. Sept.

Broom Park (Knight), B., H.—Medium size, melting pear, "partakes of the flavour of the melon and the pineapple." On the quince must be double worked; a prolific bush. January.

Chaumontel, B., O., —Large, well-known, melting. December.

Colmar d'Été, P., H.—Medium, juicy, early pear, vigorous, bears profusely, forms a compact and beautiful pyramid. End of September.

Comte de Lamy, P., B., O.—Medium, one of our most delicious autumn pears. October.

Conseiller de la Cour, or Maréchal de la Cour (Van Mons) P., B., H.

—Large, melting, grows vigorously on the quince, and forms a diffuse pyramid or spreading bush. Not always good. End of November.

Délices d'Hardenpont P., B., O.—Large, a good melting pear, remarkable for its upright growth, forms a most ornamental pyramid on the quince. October and November.

Délices de Jodoigne, H., P.—Medium size, melting and very good; the tree is hardy. Succeeds admirably on the quince and forms a very handsome pyramid. October.

Dr. Trousseau, B., H. (Van Mons). —Large, a new, excellent, and most delicious, hardy, melting pear, which succeeds well on the quince, and forms a prolific bush. December.

Doyenné Boussoch, B., H.—Very large, handsome, melting; bears profusely; too diffuse for a pyramid. October. This pear, known also as Double Philip, Beurré de Mérode, is of the same race as Albertine, but ripens a little later. Délices d'Hardenpont (Belge), Melon de Namur and Beurré d'Isenberg, are all much like it in their qualities and season, being very large and handsome, and remarkably sweet and juicy.

Doyenné Defais, P., B., H.—Medium size, melting, excellent. December.

Doyenné d'Été, B., P., H.—Small, handsome, the best early pear; best on the pear for a pyramid, on the quince a prolific and ornamental bush. July.

Doyenné Gris, B., O.—Medium, very handsome, delicious, melting, November.

Duchesse D'Angoulême, P., H.—Very large and handsome, insipid from a wall; forms a fine pyramid. November.

Duchesse d'Orléans, P., B. (Beurré St. Nicholas).—Large, delicious, flavour of Gansel's Bergamot. On the quince forms a prolific bush or pyramid of moderate growth; on the pear is more robust and fruitful. November.

Eyewood (Knight), P., B., H.—Medium, delicious, melting. On the pear it is vigorous and slow in bearing, and forms a large standard; double-worked on the quince it forms a tolerable pyramid or bush. November.

Fondante d'Automne, P., B., H.—(Seigneur d'Esperen or Belle Lucrative).—Medium, delicious, melting; very ornamental pyramid. October.

Forelle or Trout, P., B., H.—Medium, a very handsome speckled pear, melting and good. Forms a prolific bush or a pyramid of moderate growth. December.

Glou Moreeau, P., B., O., W.—Large, melting, delicious. Hardy in the southern counties, elsewhere requires a wall or to be grown in pots. This fine pear may be grown in pots, as recommended for the Easter Beurré.

Gratioli of Jersey, B., H.—Large, melting, very sweet; best as a bush. October.

Huyshe's Bergamot, P., B., H.—A seedling from Marie Louise, melting and fine. January.

Huyshe's Victoria, P., B., H.—Hardy, melting. November, December.

Jargonelle, P., B., H.—Large, juicy and agreeable; on the pear for large pyramids; on the quince forms a prolific bush, in which form it requires

care in shortening the shoots in June and July. August.

Josephine de Malines, H.—Medium size, delicious melting pear, aromatic; on the hawthorn it forms a spreading fruitful tree. Succeeds well on the quince, but does not form a handsome pyramid. As a bush or espalier it is very prolific. February to May.

Louise Bonne of Jersey, P., B., H.—Large. Mr. Rivers says, "When cultivated on the quince stock, this is the most beautiful as well as the most delicious melting pear of the season. Every one possessing a garden of six square feet should plant a tree on the quince stock of this variety; it forms a most ornamental pyramid and a compact fruitful bush." It is worthy of the orchard-house. October.

Marie-Louise, or Marie-Louise Nouvelle, P., B., O., W.—Large, melting, excellent; on the pear forms a prolific pyramid, on the quince *double-worked* a prolific bush. October, November.

Monarch (Knight's), P., H.—Medium, excellent; forms a handsome pyramid on the pear. Deserves a wall, and may always be relied on. January till February.

Ne plus Meuris, P., H.—Medium, late melting, keeping till May; best as a pyramid on the pear. March to April. Requires a wall in bleak districts. It is remarkable that this pear, sent to the Horticultural Society many years since from Belgium, is now quite unknown on the Continent.

Passe Colmar, B., O., W.—Medium, melting, abundant bearer; forms a prolific bush; requires a wall in cool climates. December and January.

Peach, or Poire Pêche, B., H.—Medium, early melting, slight aroma, very juicy; a prolific bush. September.

Prince Albert, P., B., O.—Medium, late melting, like Beurré Rance, but smaller; deserves a wall in cool climates. As a bush easily trained distaff fashion by pruning. March and April. Like the Conseiller de la Cour, this is a most vigorous grower on the quince, and requires annual removal at the end of October to make it fruitful, which is much preferable to the excessive summer pinching recom-

mended by foreign cultivators. It forms a charming pyramid, and deserves the most extensive cultivation.

Seckle, P., W., O.—Small, highly perfumed, melting, bears profusely as a pyramid on the pear. October.

Suffolk Thorn, P., H.—Medium, melting, delicious aroma; does not succeed on the quince, but forms a thorny, prolific pyramid on the pear. October.

Thompson's, P., H.—Medium size, delicious high-flavoured melting, succeeds double-worked on the quince, and bears profusely, but is more healthy on the pear; will succeed on a north wall. November.

Urbaniste, or Louise d'Orleans, P.—Medium size, a delicious melting pear; succeeds well on the quince, and forms a handsome pyramid. November.

Van Mons (Léon le Clerc), P., W., O.—Large and long, melting and first-rate; succeeds best on the pear. November.

Willermoz (Van Mons), B., O.—Large, melting; a prolific bush. November.

Winter Nelis, B., P., H.—Small, roundish, buttery and melting, rich and aromatic. An abundant bearer and a beautiful bush. November to February.

Yat, B., H.—Medium or large, a hardy Dutch pear, melting and juicy, highly perfumed, forms a prolific bush. September.

Zepherin Grégoire, P., H.—Medium size, delicious; succeeds best on the pear, and forms a beautiful pyramid. January and February.

SIX DELICIOUS AND RELIABLE PEARS FOR A SMALL GARDEN.

Marie-Louise, Winter Nelis, Josephine de Malines, Easter Beurré, Doyenne d'Été, and Bon Chretien.

SELECT PEARS FOR ORCHARDS AND WALLS.

Aston Town, Autumn Bergamot, Beurré de Capiaumont, Beurré Bretonneau, for walls only, Beurré Langelier, Beurré Wetteren, Beurré Winter, Bézy d'Esperen, Bishop's Thumb, Citron des Carmes, Colmar, for walls

only, Crassane, for walls only, Doyenné Robin, Doyenné White, Grosse Calebasse, Hacon's Incomparable, March Bergamot, Napoleon, Nouveau Poiteau, St. Germain, for walls only, St. Denis, Soldat d'Esperen, Swan's Egg, Susette de Bayay.

SELECT NEW PEARS THAT MAY BE SAFELY ADDED TO GOOD COLLECTIONS.

Aglaë Grégoire, medium, March and April; Colmar Delahaut, large, December to February; Commissaire Delmotte, large, December and January; De Lamartine, forms a handsome pyramid, medium, December; Fondante de Comice, medium, October; Léon Grégoire, large, January and February; Morel (Van Mons), medium, April and May; Nouvelle Fulvie (Grégoire), large, January and February; Parfum de Rose, small, November; Reine des Précoces, small, July; Rousselon (Esperen), medium, February; Thérèse Kumps, grows freely on the quince, medium, November.

BAKING AND STEWING PEARS.

Many of these are best cultivated as espaliers on the quince.

Black Worcester.—Very large; keeps well.

Bellisime d'Hiver.—Large, handsome, good; forms on the quince a compact, cypress-like pyramid. April.

Catillae.—Very large. February.

Crassane d'Hiver (Bruneau).—Medium size, high flavoured and half-melting.

Léon le Clerc de Laval.—Large, handsome, often half-melting, and in June may be used as a dessert pear; forms a prolific bush on the quince; deserves a wall in cool climates. April to June.

Poire d'Avril. — Large, juicy; often used as a dessert pear; forms a diffuse pyramid and prolific bush. April.

Summer Compote. — Large; a summer baking pear; a great bearer; forms a prolific bush.

Uvedale's St. Germain. — Very large; often weighing two pounds and

upwards, when grown on a wall; forms a prolific bush or espalier. May.

Verulam, or Spring Beurré.—Large, juicy; in some seasons half-melting, and a tolerable dessert pear; a most abundant bearer; known in Suffolk as Black Beurré. February and March.

Vicar of Winkfield.—Large, very handsome. December and January.

The three best baking and stewing pears are Catillac, Vicar of Winkfield, and Summer Compoet.

HARDY PEARS SUITABLE FOR THE NORTH OF ENGLAND.

Alexandre Lambré, Bergamot, Gansel's Late; Beurré d'Amaulis, Beurré, Hardy; Beurré Nantais, Beurré Superflu, Bon Chrétine (Williams's), Calebasse d'Été, Colmar d'Été, Citrou des Carmes, Doyenné Defais, Doyenné de Comice, Doyenné Boussouch, Fondante d'Automne, Gratiola, Hessle, Jargonelle, Jersey, Louise of Bonne Jersey, Thompson's.

ROSES FOR THE VICINITY OF TOWNS.

THE season being nearly at an end, I am able to offer a few remarks for comparison with the results of the experience of fellow suburban amateurs. I do not know how it may have been with others, but with me the autumnal blooming of the hybrid perpetuals has been very unsatisfactory. Many of the most noted varieties have been blind in their second growth, though the plants are fine, and in apparently robust health. When I mention such names as Alexieff, Vidot, d'Angleterre, Bachmeteff, Patrizzi, and many of like standing, it would appear that *sorts* have little to do with it; and, from what I have seen elsewhere, I am inclined to believe the weather has not been auspicious for autumn blooms. Nevertheless, I feel strongly disposed another season to substitute hardy Teas for all the varieties that do not give a free succession of flowers, and I think that with care many would do in the outskirts of town.

The roses which I have found the best are, *facile princeps*, S. de la Malmaison, and Gloire de Dijon. These could not be better, having bloomed profusely, excellent in size and colour, and are still full of buds. I would especially recommend them to amateurs. Tea Devoniensis, C. Mrs. Bosanquet, British Queen are also beautiful and free. It will be observed these are all light colours. Among the hybrid perpetuals, which have done very well, I can only enumerate the following out of forty-five or fifty sorts:—Jules Margottin, the General, the Geant, Madame Domage, Prince Leon, Triomphe des Beaux Arts, and William Jesse.

I would also advise my fellow-amateurs, who have only room for a few dozen plants, and who wish to have roses till the

frost cuts them off, to visit the neighbouring nurseries where they are *grown*, and mark the varieties *now* in bloom. Those which only flower through the summer are almost useless where space is limited. When at Messrs. Fraser's, Lea Bridge Road, a few days ago, I found few hybrid perpetuals in bloom besides V. Verdier and Marie Portener, and their rose-grower (an intelligent young man whose advice is worth taking) informs me they are excellent autumn bloomers, and upon his recommendation I have added them to my stock.

While upon the subject, at the risk of being considered heterodox, I cannot resist making a few remarks upon the newer roses. I would go into them individually, but I fear your space would not be equal to the task. Of all the number introduced under the most flaming descriptions in the catalogues, there are not more than some dozen which are improvements or novelties. Their general tendency is towards a loose, flimsy, semi-double character, with a staring yellow eye, and a total deficiency of that close, even, symmetrical form which is the true merit of a really good flower. These faults are not so apparent when drawn together in threes, and their real viciousness concealed. For myself, I will buy no more without having seen them growing in the neighbourhood where I may be, and during the various seasons of the year.

I have no doubt if a prize were offered at the next National Rose Show "for a collection of the older varieties," say none later than 1855, that many now out of general cultivation would again come into fashion, from their undoubted superiority to newer rivals, introduced more for the

benefit of the "dealers" than the advantage of the amateur, or the advancement of the most beautiful of flowers.

Homerton, Oct. 14th, 1861.

PRIOR.

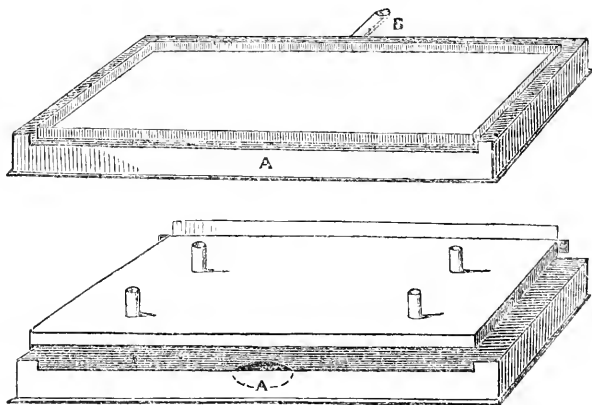
[We have had few autumn roses at Stoke Newington; there are more coming now (Oct. 26) than since July. Our plants of N. Cornelia, H. P. Geant, and H. P. Prince Léon, are covered with fine blooms,

which the first frost will destroy. At pp. 162-3 of this year's issue, we describe the few new roses we could recommend. Of Reine des Violettes we were then in doubt; we can now clear up that point by pronouncing it utterly unworthy of culture. The figure of it in Verschaffelt's *L'Illustration* was an artist's exaggeration.—Ed.]

THE BOILER OF THE WALTONIAN CASE.

NUMEROUS applications have been made to us for a sectional diagram of the boiler of the Waltonian. It was described not long since, by a learned writer, as an extraordinary piece of mechanism, "as complicated as a Geneva watch." This gentleman's knowledge of the subject may be determined by the subjoined cuts; the boiler is perhaps the simplest thing of the kind imaginable. We cut open a case and

small escape pipe, one inch in diameter, formed of lead, to which is attached the tin or zinc chimney or flue. This outer case, in which the heat from the lamp circulates, is twenty inches by thirteen inches, and two inches deep. The inner case, B, is a simple trough formed of sheet zinc, turned up at the edges and kept at its proper distance from the bottom of the outer case by means of four short legs or



sent the boiler to the engraver, for the double purpose of completing the descriptions that have appeared in the *FLORAL WORLD*, and to inform the writer just referred to that there are "more things in heaven or earth than are dreamt of in *his* philosophy." The boiler is constructed of stout zinc, and is attached to the large zinc tray on which the bed of sand is laid. It consists of A, an outer case, with orifice near the front, three inches in diameter, for the entrance of the hot air from the flame of lamp or candle. On the side corresponding to the back of the case is a

rests, one inch in length, formed by zinc bent into tubes; thus the boiler proper is three quarters of an inch deep. As this short description contains a personal allusion I here sign my name.

SHIRLEY HIBBERD.

RHODODENDRON DAURICUM.—A large plant of this rhododendron, in the garden of Miss Mercer, Bushy Villa, Teddington, is now in fine bloom, and in Hampton Court Gardens one of the same species is coming into bloom.

MR. PEARSON ON ORCHARD-HOUSES.

THERE are but few gardens of any pretensions in which these structures have not now acquired a permanent place. But many changes have taken place in the system of orchard-house construction and management, as first proposed by Mr. Rivers, of Sawbridgeworth. Indeed, the visitor to the extensive and interesting nurseries of Mr. Rivers, is sure to suffer disappointment in his first inspection of the structures of which he has heard so much. From the various incidental remarks of Mr. Rivers, in his excellent and amusing book about the charming spectacle of trees arching over the central walks, and forming avenues of branches laden with flowers or fruit, and the delightful recreation to be found in the culture of potted trees, the visitor anticipates an induction to fairy-land, and is rather startled on first finding himself amidst a number of rough sheds, with glass roofs, and his preconceived notions of the elegance of Mr. Rivers's arrangements are dissipated for ever. The very first modification of Mr. Rivers's plan was the construction of more substantial houses than he recommended. If a lady or gentleman is to follow the recommendation of Mr. Rivers for purposes of recreation, the end can scarcely be attained with the sort of structures that look as if a smart gale would blow them to pieces, and hence the rough boarding and larch poles have given place to substantial walls to receive the sills, and to ventilators more thoroughly controllable than cracks in the wood-work caused by the heat of the sun. But how do these rough shed-like houses serve their intended purpose? We must answer, very inefficiently. They are as bad for use as they are ugly in appearance, and the many complaints that amateurs and gardeners make of the failure of their crops are due, in a great measure, to the very rough nature of the constructions which have been erected by thousands on the cheap plan proposed by Mr. Rivers, who is himself unable to succeed with certain of the more tender varieties of peaches and apricots. Mr. Rivers is, in fact, too much enamoured of our east winds. He knows, as we all do, that in the native countries of the peach the winters are severe, and at the season when the trees are in bloom, they are subject to the influence of dry cold winds. Hence, Mr. Rivers proceeds on the supposition that the more the wind whistles through an orchard-house during March and April the better, forgetting that the peaches and

apricots we cultivate are mostly garden varieties, superior to the original species size, flavour, and texture, and possibly some degrees more tender in constitution. But even if it be proved that our most esteemed peaches and nectarines are not a whit more tender than the species from which they have originated, it does not follow that our cruel and remorseless east winds are identical in character with those that blow over the sands of Persia and through the flowery valleys of Armenia. That point, indeed, is not worth determining. Experience at home will be our best teacher, and when Mr. Rivers gives a list of peaches that have failed with him, we do not hesitate to attribute the failure to the falsity of his theory, and for this reason, that in well-built houses we have seen the same varieties loaded with the finest possible fruit. We are deeply indebted to this father of British pomology for his eminent services as a propounder of plans and a raiser of new varieties, but we must take exceptions to his cheap boarded shanties as unfit for a respectable garden, as too cold and draughty for the trees they are intended to shelter, and as, upon his own showing, having failed to fulfil their intended purpose even in his own hands.

But we are no longer shut up to Mr. Rivers and his book. Mr. Pearson, of Chilwell, has become a formidable competitor by the publication of his work "On the Construction and Management of Orchard-houses" (Virtue), and his first proposition is to substitute for the original structures of shrinking boards, side walls of brick, as better adapted to the comfort of the trees, and the gardener who attends to them. Mr. Rivers proposes to expend on covering 2400 square feet of ground, the sum of £140, and the result will be an unsightly structure that a lady will not care to own, and a gentleman will always be half ashamed of; besides that, the trees in it will be aired a vast deal too much while the nipping east wind is in full force for weeks together. For an outlay of £230 Mr. Pearson proposes to cover 2700 square feet on eighteen inches of brick-work above the surface, the walks paved with black and buff quarries, the bricks laid in Portland cement, and the whole finished in a style fit for any garden.

We are only at the beginning of orchard-houses yet. The wonders that have been accomplished by their means already suggest how much more will be done hereafter. Instead of occasional crops of

peaches from walls, good management will insure them every year in these cheap structures, for they may still be cheaply built, though substantial, those of Mr. Pearson's costing only 1s. 8d. per square foot of ground covered. They afford the most perfect facilities for effectually ripening the wood, the most important operation in the whole routine of management, and they also allow of artificial fertilization, which Mr. Pearson insists is essential to the production of a fair crop. Let him on this subject explain himself:—

“Most persons know that the farina or pollen of the stamens must come in contact with the pistil, if perfect fruit is to be produced. To this end Providence has placed honey in the nectaries of flowers, as an attraction to bees and other insects, which, in buzzing about, distribute the pollen. A moment's consideration of this subject will explain the cause of many failures. Of course the farina cannot fly, if not in a dry state. A damp atmosphere, therefore, tends to prevent the setting of fruit. It will be an advantage to have your plants in bloom, when there is a chance of the weather being warm enough to allow of ventilation, and the assistance of bees to fertilize the flowers. The span-roofed houses affording the means of ventilation near the ground on both sides, the whole length of the house is much superior to the ugly glazed sheds, called lean-to houses, generally built.

“If orchard-house trees are in good health, and the weather be warm when they are in bloom, and bees in abundance, they will probably set three times the fruit they can bring to perfection; but as it is better to leave nothing undone to insure success, we always fertilize the flowers by touching them with a camel-hair pencil, in the middle of a warm sunny day. It takes but a very short time to go over every plant in a large house. It is the opinion of many besides Dr. Darwin, that not only is the pollen of some varieties of a species stronger than others, but that when applied to a different plant or variety, it is more efficacious. In using a perfectly dry camel-hair pencil, it will be found that though the farina of each bloom may be distributed, but little can be carried away by the brush. Let us, then, take a lesson from Nature. Pull off a bloom and open it lengthwise, and it will be found sticky with honey in the inside; insert the brush, and it will then, when afterwards used, be soon covered with pollen, and you will thus cross variety with variety. If the petals soon begin to drop and leave the base of the flowers attached to the tree,

you have been successful, and may hope for a crop. I have been thus explicit, because aware that this is a matter of importance, and often neglected.”

There is another point on which we believe experience will prove Mr. Rivers to be wrong, and that is, keeping trees in the same pots for several years. Mr. Pearson does not find fault with this practice. He says, “I have seen trees which have never been repotted, but only top-dressed for nine years, and which are as healthy as ever.” We have seen the same thing, and have trees that have never been shifted for as long a period, and which are still healthy and fruitful; they are of course assisted with top-dressings of fresh loam and dung. But we fully believe that an annual repotting will pay for the trouble; we never yet shook a tree out and repotted it in fresh stuff, even if in the same pot, without being satisfied that the practice was a good one, and very little more labour than the necessary top-dressing. We accumulate all the rough “core” produced in making fine composts in heaps, which, by the end of the season, are sufficient for the purpose. These heaps consist of nodules of chippy dung, lumps of clay, loam and turf, pebbles, corks, and the coarser parts of charred rubbish. There could not be a better mixture for the purpose, and that the trees like it is evident by the style of growth and fruiting. Let those who are satisfied with keeping trees in the same pots for several years with the assistance only of top-dressing continue in the practice, but we would suggest to those who are dissatisfied with the growth of their trees to adopt the plan of turning them out at the end of October, and repotting in fresh stuff; the roots need not be cut about, but may be slightly reduced, and the same pots used again: the result will be a production of an abundance of new fibres which will invigorate the trees, and probably contribute to improve the quality, if it does not increase the quantity of the fruit. That trees so manured will live as long as trees on walls, cannot be doubted. Mr. Pearson says: “My belief is, that the average life of orchard-house trees will be greater than those trained on open walls, subject as these latter are to so many injurious influences. The orange has long been cultivated in pots and tubs, and trees are in existence, in perfect health, hundreds of years old, as all know who have visited Versailles. As an experiment, and to show what might be done with a peach-tree, I had a small plant of Royal George peach potted in what is called a two-quart pot;

it was not allowed to root through the bottom, and it was well fed by manure water; thirteen peaches were ripened, and these were amongst the best fruit in the house. Early in the autumn, before it shed its leaves, it was taken up, all the earth shaken from its roots, and placed again in the same pot, and it has now seven fine peaches on it. The plant has only three small shoots, is about eighteen inches in height, and is in better health than last year."

No doubt we shall continue to hear of failures in orchard-house management, and such samples of their produce as the miserable specimens exhibited at the last

Crystal Palace Show may deter many for a time from entering on this delightful department of practical horticulture. But the orchard-house is too well established to need vindication, and there will always be examples of failure in this, as in every other department of the science. Abundant ventilation, subject to perfect control, the judicious use of liquid manure while the fruit is swelling, and impregnation of the blossoms, are leading points of management, which we hope all adherents to the system will keep in mind, that the probabilities of failure may be lessened, and the system brought to its highest possible position of practical perfection.

ON THE PRESERVATION OF GREENHOUSE PLANTS IN WINTER.

It is only under fortuitous circumstances that man can possess and enjoy the sweets and pleasures of life, without first incurring the labours and cares by which, and through which, such are to be obtained. If a man will have fame he must labour to obtain it—if he will be rich he must not sit idle—if he should be born to possessions he will not be exempt from the care of preserving them from encroachment; so it is with those who would enjoy a garden and flowers; they must rear them, and tend them, and preserve them during the winter from the encroachment of enemies, to which they are subject to fall a prey, if uncared for; these are frost and damp, to which we may add drought and darkness, the two former being far more destructive to the majority of plants than the two latter, the last-named being so only when in an excessive degree, that is to say, to plants in a state of rest during the winter months. In order, then, to assist our readers with hints for the preservation of their plants from the above-named enemies, it will be well to classify some of the more common and generally cultivated greenhouse and bedding plants, leaving them to modify the instructions according to their means of carrying them out, for, in order to accommodate the number and various habits and characters of what we now cultivate as *bedding* and *greenhouse* plants, many *impromptu* situations may be made temporarily available as auxiliary to the greenhouse or pit. As the greenhouse will probably be gay with *ericas*, *camellias*, *cinerarias*, *violets*, *cyclamens*, *lachenalia*, *chrysanthemums*, *correas*, *Primula sinensis*, *tree carnations*, *mignonette*, etc., with which

must be associated other plants in free growth, or approaching a flowering state, as *tropæolums*, *acacia*, *daphne*, *cytisus*, *veronica*, *chorozema*, *azalea*, etc., all of which will require all the light the dull days of winter will afford, with a temperature from 5° to 15° above the freezing-point, also, a moderate amount of water at the root, but none overhead. It will also be necessary, in dull weather, to sometimes make a fire to dry up damp, in order that the flowers may not become mouldy; observe, however, to give air at the top of the house at the same time. In frosty weather use fire as sparingly as is consistent with keeping the frost out, otherwise plants may become drawn. We are supposing that a pit is at hand for the preservation of the store plants for the flower garden, such as *verbena*, *petunia*, young *geraniums*, etc., which are first struck off and hardened for a few weeks under a south wall; if not, a few shelves may be placed upon brackets, or suspended from the roof rafters, a few inches from the glass, for their accommodation during the winter, and in summer may be taken down and stored away. Most of the *geraniums* in such a situation would stand almost through the winter without water; but other things must be frequently examined, especially if standing thickly in their pots, to see that they do not suffer for want of water. The herbaceous *calceolarias* and the fancy *geraniums* will also do well upon such a shelf, but the former must sometimes be sprinkled over their foliage, as they do not prosper so well in any situation as a cool pit. But to follow out our supposition that a pit of some kind is at

hand, if only a turf pit, made of peat sods, with *waterproof* lights, and a good dry drainage at bottom, which may be effected by filling in with a few inches of broken bricks, charcoal, or dry cinder-ashes, or small coke, on which to place the pots containing the cuttings. In such a structure the great enemy to combat is damp. Let, then, the lights be tilted every fine day. Frequently look for damp or decayed leaves. If any plant requires, take it out to water, and keep it out until the surplus water is drained from it. Should any worms be seen to work in any of the pots, lose no time in turning out the plant to find them, as they obstruct the drainage and sour the soil; and should the mildew appear in the form of white spots upon the foliage or stems of the plants, be also equally expeditious in dusting a pinch of sulphur over the infected plant. In frosty weather make sure by dry coverings to exclude frost; but should any doubt exist on that head when the frost leaves us, be in no haste to expose the plants to light; it is much safer to give air by degrees before stripping off the covering, as plants will recover from the effect of slight frosting whilst kept in the dark, whilst one gleam of sunshine would be fatal. Having disposed of the flowering and growing plants in the greenhouse, and the young stock, either in a pit or upon shelves, there remain two other classes of plants to provide for, namely, the greenhouse plants for a state of rest, with which we shall associate large plants used in flower-garden decoration, and plants requiring a little warmth to bring out their flowers before carried to the greenhouse. The former of these may be kept under any temporary shelter until the very verge of winter, such as an open shed, in front of which may be suspended mats, tarpaulings, etc.; but the cultivator must, at the same time, be prepared with the means of protection ready at any moment that serious frost sets in, and, as every place offers some special and distinct means, differing from another, we can only offer general hints, leaving the details to circumstances. A shed, or outhouse, with *close-fitting* doors and windows, especially if built with hollow walls, and having reed or some other non-conducting substance for a roof, would protect many plants for a considerable period, and this would be, in a great measure, according to the degree of light it admitted. In mild weather the doors and windows might be thrown open, and in frosty weather a small stove or fireplace might be used with moderation, though, of course, the plants would be best

without it, if the entrance of frost can be otherwise prevented; or part of a stable, or loft over a stable, where there is considerable warmth below, might, by the assistance of short, dry hay, placed between the pots and plants, be made available for the purpose. The plants which it is possible to keep by such means are old fuchsias, hydrangeas, Brugmansias, myrtles, tea roses, agave, agapanthus, old scarlet and other geraniums, in pots, vases, or fancy boxes; also the old plants taken from the borders, and packed thickly in pots or boxes to be potted off in spring. These latter should be taken in before frost strikes the bark of the stem, and all leaves larger than a half-crown should be cut off, with all straggling shoots. Fuchsias should be left unpruned until the approach of spring. Myrtles or neriums should be kept from desiccation by small allowances of water occasionally, if required. Deciduous plants and geraniums will scarcely require it. The other class of plants I have alluded to are such as require a closer atmosphere than that of the greenhouse, with, if possible, a little bottom-heat, in order to bring them into proper trim for taking their place in the greenhouse or drawing-room flower-stand, for the earlier these can be had in flower the more will they be appreciated. They consist of all the sorts of Dutch bulbs, *Dielytra spectabilis*, Lily of the Valley, musk, roses, *Deutzia gracilis*, or any varieties of hardy shrubs, that may have received proper treatment during the past summer to fit them for a slight forcing. These, of course, can be brought to perfection at almost any period of the winter, where a proper forcing pit exists; but, supposing that we are writing for those with limited means only, we will presume that a melon-pit only is available, without hot-water or flues to heat it; as soon, then, as sufficient leaves can be obtained to half fill it, or, indeed, as they are gathered, they may be put in, and, being protected from wet by the lights, will sooner commence to heat; these will afford bottom-heat, and assist also the atmospheric heat; the rest must be secured by shutting up the solar rays, when they can be caught, and by the application of linings of leaves and dung outside the pit. Air, however, must be given in the forenoon of fine days, shutting up early, so as to secure all the warmth possible in the afternoon. The rising of the temperature from the sun's rays after it has passed the meridian, may be safely indulged in, but mischief may arise from the same cause before that time, if air is not given. In frosty weather straw or refuse

hay may be piled against the pit walls, and a covering of hay and mats over the glass. As the plants approach a flowering state they may be removed to the sitting-rooms or greenhouse; and if the pit is not required very early for cucumbers or melons,

some of the bedding plants may be introduced, to afford cuttings; or some of the plants from the loft, shed, or outhouse, may be exhumed from their hiding-place, and here receive rather better treatment.

H. HOWLETT.

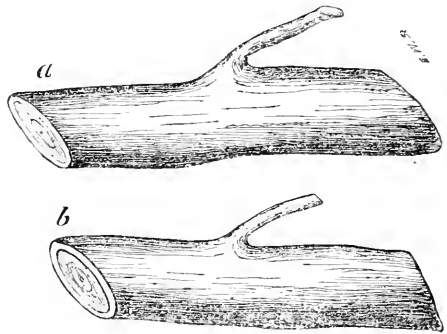
GUMMING OF FRUIT TREES.

MANY of your readers owe you their gratitude, I hope not their *pence* as well,* for your articles on "Profitable Gardening." The pleasure of a hobby is always greater when it pays. The garden is a hobby to many, but when we find, from day to day, it is all going out and nothing coming in, we poor people cannot stand it. This need no longer be the case, for the FLORAL WORLD shows how to make it pay.

"Well," you will say, "what is all this about?" I will tell you, sir. You have now began 'Fruit Culture', and I have got a wrinkle quite at your service. I have tried it, sir, for three years and never *once* failed. I can, if necessary, bring some of the first gardeners in the country to stand godfather to my plan, though it ain't my *own* child, but one I took to young, that is, when it was young, *not me*; and now with your help we will set him up in life, and let him try his own fortune, he will soon have a very large connection. This is, if ever he gets into the FLORAL WORLD, and I hope he will, and then if he behaves well, all will patronize him.

Great difficulty is found in preventing the stone fruit-trees from "gumming" when cut. They gum and bleed so much, that often a very bad case is let alone from fear of the remedy being worse than the complaint. A gardener cannot always have

pots and pans containing one solution and another in his hand, even if such would stop the gumming, which many won't do. If when a tree be cut the edge of the cut be bevelled off, or rounded, the tree will



not bleed, no matter what time of the year it be cut. Fig. *a* is the common cut, and it will bleed; Fig. *b* is my child, and it won't bleed. The bark is cut off as a shoemaker makes a thick sole look like a thin one. Now this is simple enough, if not I'll try again, but remember this is the true cut and fit. I have tried on branches two inches thick at the spring, summer, autumn, and winter, and have never had gumming. Peaches, plums, cherries, etc., etc., are all safe with this plan. A.

A NOTE ON PLANTING SHRUBBERIES.

THE last two winters having so thoroughly proved what shrubs may be relied on as hardy and fit for permanent effect, it behoves planters to make notes of such, and to use them in future rather than the

* No, our subscriptions are received in advance.—ED.

more doubtful ones. The common laurel, though cheerful-looking, cheap, and very extensively planted, has proved to be much less hardy than others which may be had equally cheap. For instance, the *Berberis aquifolium* will prove a much better thing for covering the ground between the more

tree-like shrubs than the common laurel, as it is dwarf and spreading, of a fine dark glossy green, forming a much more agreeable repose for the eye than the laurel. Seedlings of it may be bought by the thousand, and if planted thickly between the shrubs which are intended to stand as specimens, will not encroach upon them as laurels sometimes do. Hollies, laurestinus, Portugal laurel, Phillyrea, and evergreen oak have proved too tender for the climate of Norfolk; whilst all the varieties of

Arbor vitæ, juniperus, yew, box, Cupressus, and most of the cheap and well-known coniferæ, have stood unharmed. Many other of the newer and more expensive evergreens have also been reported hardy by Mr. Hibberd and others, to whose articles the reader may refer if he wishes to add to the above list, my present purpose being more particularly to recommend the use of the Berberis aquifolium in the room of the laurel.
H. HOWLETT.

GARDEN AND GREENHOUSE WORK FOR NOVEMBER.

AURICULAS to be placed in their winter quarters, be kept clean, and have plenty of air.

BULBS not yet planted to be got in without delay; the soil to be in good tilth, and well manured.

CAMELLIAS are now in fine bloom in many places, and only need moderate protection to keep them gay. But as they are not yet wanted, those showing colour must be retarded as much as possible to keep them back till the chrysanthemums are over.

CHRYSANTHEMUMS to have plenty of water, and no more liquid manure. By keeping the backward plants out to the latest moment which it is safe to do so, they will come in usefully as a succession to keep the conservatory gay till after Christmas.

CINERARIAS coming forward must have attention, or some may be lost through damp. Give plenty of air, and place the forwardest in the house near the glass.

DAHLIAS to be stored safe from frost and damp. Be sure the roots are correctly tallied.

EVERGREENS to be planted should be got in at once, before planting deciduous trees, as it is now full late for them.

FUCHSIAS done blooming to be left out as long as possible, to harden the wood, and those for specimens next year to be started gently as soon as they have shaken off their leaves, preparatory to repotting in a month's time. Standards must be kept slightly on the move all winter to make sure of them.

GERANIUMS potted from the borders to be pruned in, but not severely, sufficient

only to remove the soft sappy growth, as severe pruning would cause them to grow again too quickly. Those for special purposes and for early bloom should be cut in close, and put in bottom-heat for a month.

HARDY TREES of all kinds may now be replanted; and in ordering fruit-trees, remember the first customers have the first pick of straight stem and good heads; there is nothing gained by delay. The places where trees are to be planted should be deeply stirred as soon as vacant to air the soil before planting.

KITCHEN GARDEN will need frequent clearing of dead leaves and rubbish, and the more frequently the soil can be turned while unoccupied the better.

ROSE STOCKS to be planted at once. Reject all the gray hard-barked briars; the best are those with formidable spines and a greenish bark.

SCARLET SALVIAS may be kept in bloom a considerable length of time, in a warm light place in the conservatory, especially if rather pot-bound, and kept in vigour with manure water.

VINES breaking to have air cautiously, as a chill may result in disease of some kind hereafter. If red spider appears on vines planted inside, give the roots a liberal watering, in addition to the other means of eradication, a vigorous growth will prove as powerful a preventive as any special applications of Gishurst, etc.

VIOLETS potted now, by taking up strong runners, will bloom early, and be of service. Use plenty of charred rubbish to lighten the compost, which should be rich.

WALL TREES to be pruned, and as much good wood as possible laid in.

TO CORRESPONDENTS.

BOOKS AND CATALOGUES.—The "GARDEN ORACLE" for 1862, is now ready; it is a full review of the progress of horticulture during the past year, and contains descriptions of, and cultural directions for, 365 window plants, classified so as to indicate at once their suitability for every class, from the cottage to the palace. The descriptive list of New Plants comprises everything worthy of record, introduced during the year; the lists of Plants, Flowers, Fruits, and Vegetables for general use and exhibition, have all been carefully revised, and the old and cheap varieties are classed apart from the new ones, for the guidance of purchasers according to their means. Mr. Tegetmeier has contributed a paper on Bee-hives; showing how the amateur may construct for himself, at a trifling cost, the best wooden boxes for the depriving system; and there are, in addition, notes on curious, interesting, and useful plants for botanical collectors and gardening amateurs. The four volumes of this work contain a mass of information as valuable now as when they were first issued; and as they have all been reprinted, those who possess only one or two may complete their sets and bind them together for perusal and reference.—"MARVELS OF POND LIFE, by H. G. Slack, F.G.S. Groombridge and Sons." A delightful series of pictorial and literary sketches of the microscopic plants and animals commonly found in ponds and brooks. As a text-book for the use of the microscope, and a guide to the selection of objects, it is the best work of the kind we have yet seen; too many such books are mere compilations; this is the production of a master of the instrument, and a thorough cultivator of microscopic science.—"Chatter's Catalogue of Hollyhocks for 1862," is arranged on a new plan, so as to classify the varieties according to colour, height, price, and quality. It comprises the best new and old hollyhocks grown at the nurseries, Saffron Walden.—"Wm. Paul's Catalogue of Roses grown at the Nurseries, Waltham Cross," will be useful to intending planters, as the varieties are faithfully enumerated; only the best of the new ones are entered.

NAMES OF PLANTS.—*Quiz.*—Your first is *Rhodanthe Manglesii*, not "an eatable passion flower," but a greenhouse composite-flowered annual, of slender growth and very pretty, to be grown in the same way as an aster. Your second, "*Stratiolium tripeolium*," we never heard of before, and never expect to hear of again. Is it a *tropeolum*? If so you will find plenty of information about it in former volumes.

NEW GARDEN.—*Dr. W., Maidstone.*—You will see that your wants have been anticipated. As to planting the trees on stations, that must depend entirely on the nature of the ground. If a "loam ten feet deep," and lying high and dry, then to adopt stations would be waste of money; if the subsoil is gravelly, or wet, or a cold clay, then stations will well repay their first cost. We do not recommend nurserymen; those who advertise in the *FLORAL WORLD*, may be depended on to supply whatever you want. One general recommendation we offer to all our readers, is to deal with the nurserymen in their own locality, if possible, as they are likely to know best what suits the district, and the goods can be seen before they are purchased.

VARIOUS.—*J. R.*—Two parcels safe, thanks for them. Strange; the geranium truss was so far

gone that we could not get the last bud to open, but from a few withered petals, we take it to be *Crimson minimum Nosegay.*—*W. B.*—Owing to the author's heavy pressure of engagements of late, "*Brambles and Bay Leaves*" has been delayed. It will be ready about the middle of the month.—*Civis.*—You may obtain the information you require, by stating your wants to Mr. Chitty, of Stamford Hill. We quite sympathize with you.—*Polly.*—Gas tar is the cheapest, and serves the purpose as well as the other; but either will do.—*R. Z.*—No; we destroy all anonymous letters as soon as answered; letters with real names and addresses we file, in case of requiring to refer to them.—*W. H.*—The department of study you are interested in, is fully treated in "*RECREATIVE SCIENCE*," in which, for eightpence a month, you may obtain information of the progress of every department of science, microscopic botany and entomology included.

OLD GARDEN.—*A. C. B.*—It will be hard work for you to bring such a place into decent order, but take the bull by the horns, persevere, and you will be sure to conquer. As for the old fruit-bushes, if they are smothered with bear-bine, root them up and burn them. In fact, destroy and burn whatever has become so bad through neglect that recovery is doubtful. The apple-trees and roses will probably pay for restoration, the filberts will not. The strawberries you may replant by cutting strips like turf, and the site chosen for the new plantation should be trenched two spits deep, and dressed with the charrings, of which you will have plenty. In February next, top-dress them with half-rotten dung, lightly forked in between the rows. Keep the vines; pruning and cleaning will render them fruitful. It will be quicker and cheaper work to reduce the place as speedily as possible to the condition of maiden ground, excepting such few things as there is a fair prospect of recovering. A labourer can trench it over, and lay up in ridges to the frost, and with liberal manuring you may secure abundance of vegetables next summer to compensate for having to wait for other crops. We have had to deal with many such a piece of ground, and have generally found it the cheapest course in the end to clear it, prairie fashion, by fire. We once struggled for three years with a quarter of bush-fruits, which a previous tenant had allowed to run unpruned for years, eaten up with bear-bine. At last we turned them out, and made a sepulchral pyre of them, and that piece is now covered with a beautiful lot of dwarf bushes, all from cuttings of the trees destroyed, and not a weed to be seen. As you have been a reader of *FLORAL WORLD*, you will know how to go to work in earthworks and planting. In the Nos. for Jan., Feb., and April, 1858 (Vol. i. pp. 18, 42, 78), are some instructions on the restoration of old gardens which exactly meet your case, and you will be sure to derive from the perusal of them some suggestions that will be of value.

ROSES.—*G. W. F. H.*—As you have only a pit to winter them in keep them in the thumbs, and pack them to the rims of the pots in coal ashes. We have made notes on all the new roses, as you will see.—*Tyro.*—As you can winter yours in the greenhouse, shift them at once into sixties, and use sandy peat and turf rather rough, without dung. This will cause them to form fine masses of roots, whereas dung now would render them too sappy.

PROPAGATING CASE.—*A. Z.* would greatly oblige

many readers by furnishing a front view or section of the case at work, so as to show the escape of smoke from the lamp. Also would his tinman supply a few lamps of the same make, which the Editor would receive, pay for, and distribute to readers who are not so fortunate in securing the fulfilment of their wishes. Will he render his description additionally valuable by giving particulars of the form and make of the boiler, its depth, capacity, etc.

LOBELIA FULGENS.—*G. V.*—If your plants are in the open ground, take them up and pot them in good fuchsia compost, with plenty of drainage. Keep them in a pit or greenhouse all winter. They must never go quite dry, as they are naturally marsh-growing plants. In spring, when they begin to grow, divide them, and pot afresh in very rich compost, and encourage growth with extra warmth and moisture, and either shift as they require it, or turn them out in rich soil in June.

CINERARIA MARITIMA AND CERASTIUM.—*R. U.*—*Cineraria maritima*, take them up and pot them on elevated positions, where the soil is chalky, it will survive the winter. But in gardens it is generally taken up and potted, with liberal drainage, and may be wintered in a frame or pit. It may be propagated either by seeds or cuttings. The cuttings do not root quickly, but if a thousand were put in there would not be the loss of one, if in three parts sand, and only kept moderately moist. We propagate it all seasons without bottom-heat, but in April is the best time for novices. *Cerastium tomentosum* may remain out all winter, and be taken up in the spring and divided. If wanted in quantities, the young tops may be struck either with or without the help of heat.

ROSES.—*W. D. P.*—*Felicite perpetuelle*, and all other climbing roses, should be cut down close in February, so as to obtain a new and strong growth from the stool every year, for the first three years after planting. They will throw up stronger and plumper shoots every time; after that the growth only need be regulated by cutting out thin weak spray, and occasionally removing an entire rod, to make way for a new one. Lay on plenty of manure at pruning time, and fork a little in about the roots. For the communication, thanks.

HERBACEOUS FLOWERS.—*A. T.*—At pp. 103, 137, and 161 of the *FLORAL WORLD* for 1859, is a complete list of hardy herbaceous flowers, from which you can select with very little trouble. In the *GARDEN ORACLE* for 1862 is a list of 365 choice window flowers, which we are vain enough to think worth more than the shilling charged for the book. We cannot now give the list you ask for but will file your letter, and think about it.

JUSTITIA CARNEA, ROCHEA, and SPARAXIS.—*C. J. F.*—This is a *stove* plant, and to make much of it in a greenhouse requires considerable skill. They must have *liberal* culture or they will not flower, but in a starved state, and at too low a temperature, they keep green and look healthy. We did not advise it for a cool house, and never included it among the plants suitable for amateurs. Nevertheless, its peculiarities may be accommodated with small means. We have just seen three fine plants of *Justitia coccinea* that were cuttings last February. They were rooted in a euenuber-pit, potted in thumbs in peat and put in a greenhouse where fire is only used to keep frost out. They had three lifts up to August, to sixties, then to forty-eights, and last into seven-inch pots, the soil being lumpy peat, half-rotten dung, and loam, about equal parts. They are now showing bloom all over, and only need a little more of the same care to be fine specimens in February. The house is a lean-to, and one of the hottest

places all summer imaginable. These *Justitias* were roasted with sun-heat, and kept from shivering by shading, syringing, and plenty of water. *Rochea falcata* requires a warm greenhouse, soil broken bricks, sandy peat, and dung, equal parts, plenty of water and full sun all summer, and not a drop of water all winter. *Sparaxis* will bloom to perfection in pots, grow the same as *Ixias*, in rough peat, with a little sand, and old sweet leaf-mould, say two-thirds peat. They are nearly hardy, and will do very well in a warm, dry border. When in pots they should be kept cool, but safe from frost, hence a pit is the best place for them. See *FLORAL WORLD*, 1859, p. 226. The lovely *Hoya bella* will do in any warm, airy greenhouse, in winter never lower than 40°, but 50° is a safer minimum. During hot sunshine, shade and in repotting use peat, loam, charcoal the size of hazel-nuts, and pounded bricks, equal parts, good drainage and plenty of water.

TROPEOLIUMS.—*Amateur.*—We said distinctly, when the Tom Thumb race of *tropæolums* were first sent out, that they would never give satisfaction as bedders, and they never have; it was not in the nature of the race either to produce a pure scarlet, or a refined habit of growth; however, they have made many a place gay for a trifle, and we must not condemn them as worthless. What you want is plenty of the best bloom the race is capable of, and you may be content with *Elegans* and *Triumph de Hyris*, which are two of the best bedding plants in existence. Not bloom continuously; why, we have them loaded with as fine blooms now as in July, and in one part of the garden, where excessive neatness is not of much consequence, we have allowed to run beyond bounds, spreading in all directions, with as many or more blooms than leaves upon them; they are such desperate bloomers we had not the heart to cut them in and spoil their joy. But it is another matter if you grow them from seed. We described last year the result of an experimental culture of seeds of *elegans*, and those worth keeping amounted to about ten per cent. of all the plants, and even then there were none to beat the parents. Get the sorts true, keep a plant of each all winter, and let them bloom as they like, and bloom they will; take cuttings in April, root them in bottom-heat, grow on till turning-out time, in rather poor soil, and after that the management, to do them as at Crystal Palace, is an affair of finger and thumb. Cuttings of any kind root quickly, whether young tops, or stout stems cut into lengths, and they bloom better for being struck late.

CELERY FLY.—*W. M., Clapham.*—We are in the same fix, the enemy has got the best of us. The parent of this grub is called *Tephritis onopordinis*; it is a beautiful two-winged fly, about the size in wings and body of these lines. The eggs are deposited at various times, from the end of May to the end of July. The grubs now under the cuticle of the leaves will descend into the earth, and remain there all winter, to come forth as flies next spring. The remedies must turn upon the habits of the creature. When depositing their eggs numbers may be caught by stretching a line, smeared with bird-lime, over the plants, dusting the leaves of the plants with soot, or any other substance harmless to the plant and obnoxious to insects. To destroy the grubs, and be rid of that brood next year, the leaves should be cut off at once and burnt, and as the soil in which the celery is now growing will be full of them all winter, stir it frequently; the birds will pick out thousands, and the frost will kill thousands more. A few of our pompones are attacked.

THE
FLORAL WORLD
AND
GARDEN GUIDE.

DECEMBER, 1861.



THE close of the fourth year of the FLORAL WORLD affords us a legitimate occasion to express our thankfulness to our numerous friends who have aided us, and whose assistance we yet hope to be advantaged with in the future. This work has succeeded far beyond expectations, and as at first, so it is now, the cheapest garden journal extant. We dare not say it is the best, because of the old proverb, "Self-praise is no recommendation," but we must conclude that it has so far served a useful purpose, for, after all, success is a very fair test of merit. Our readers will best understand that we have conscientiously endeavoured to do justice to the confidence reposed in us, by comparing the issue for this year with that of the first year of the publication. As we found increasing support, we were enabled to effect successive improvements, and there is no work at the price which attempts to compete with us, either in variety of matter or profuseness of illustration. Though our circulation is extensive, and has steadily increased from the first, we find that the expenditure, especially in illustrations, verges closely upon the average incomings, and the price of the work is so low, that if we were to sell a few millions instead of a few thousands, we should have no great hope of being known throughout the country as millionaires. We have no claim on any of our friends to do more than pay for the book and read it attentively, so we ask as a favour, and not as a right, that those who really have found the FLORAL WORLD useful and entertaining, will recommend it to their friends, so that as old subscribers disappear—and the great enemy removes a few every year—new ones may take their place to keep the FLORAL WORLD revolving. We may make the request also with better grace by pointing to the successive improvements effected. We have the assistance of able pens, we give careful attention to all inquiries, and frequently spend hours in preparing replies that amount to only a few lines of printed matter when all is done; as, for instance, when O. P. Q. asks what particular flower it is that looks like a ship in full sail, on the lake at Kew; we go to Kew, spend a day in the journey, and the reply to O. P. Q. is, "The plant you ask about is *Navicularia fluviatilis*." In fact, we have the interests of our

readers at heart, and it is the love of horticulture that binds them and us together in something like family ties. As the head of this particular family, we ask for whatever help can be afforded us; we don't want a testimonial or a subscription, or a vote of thanks, or invitation to a dinner; we simply want more subscribers to the book, and those who take it will be most benefited, for our profit is an infinitesimal fraction of a farthing per copy, and the reader's profit is more potatoes, more apples, more cabbages, more flowers, and everything of the best, and some better than they ever were before; besides entertainment in the new tasks suggested, and the agreeable pastime of reading about gardens and the flowery things that belong to them. A few friends have been very constant in sending us notes of their experience, and results of their inventive genius; many more might do so who never yet thought of such a thing. There is our friend Ipse Dixit who has grown *Planta innominata* 500 feet high, and has never yet sent in a word about it; but if the earwigs creep through the keyhole of his conservatory, and consume his best plant of *Lignosus ligneus* in a single night, he will immediately write to know how to prevent such a thing in future, and we shall have to advise him to touch the tail of every earwig with a drop of oil, and that will render them oily and incapable. Then our friend has influence, the result of probity and intelligence, with fifty neighbouring gardeners, and he has never yet told them that the *FLORAL WORLD* is *his* book, and that from its pages he learned the secret of stretching *Rigidorus inflexibilis* so as to take first prize with it, and obtain honorary fellowship of the R. H. S. Perhaps this is enough; it is only once a year we say a word about ourselves, and on those occasions we do, as we do now, wish our readers, contributors, artists, printers, publishers, all who are concerned in the progress of our agreeable labours, a MERRY CHRISTMAS AND A HAPPY NEW YEAR.

NOTES OF THE MONTH.

As we intend with our next Number to modify the plan of this portion of the work, a few remarks appear necessary. We find that to give full reports of all the shows that occur from month to month takes up an unreasonable amount of space; to report one in full, and another in brief, has an appearance of partiality; and to select for full reports, those which attract the most public attention, is rather to record the movements of fashion than to recite the history and progress of horticulture. Many a local show, unknown beyond the limits of its immediate operations, does more to advance the art than the great assemblies where fashion finds relief in agreeable promenades. This part of the record belongs more properly to the morning newspapers, which are very accurate in lists of prizes and names of the company present, but woefully inaccurate in whatever they think it needful to say about scented dahlias and roses grown on laurel bushes. We purpose to adopt a plan which will enable us to report on the progress of horticulture without burdening our pages with long lists of names and prizes. It cannot matter much to the mass of our readers that A. B. was first, and C. D. second. No doubt this plan will disappoint many, but we feel that we are bound to employ our pages to the best possible purpose, and information of permanent value should have preference over matters of only temporary interest. Many of our friends, who are interested in local exhibitions—which we have reported more fully than any other horticultural journal—will probably complain of

the course we intend to adopt, but we will anticipate their objections by frankly telling them that, as a rule, we have derived no benefit commensurate with the trouble of reporting exhibitions held in distant places; and the general bulk of our readers will, we feel assured, prefer summaries of results to catalogues of names and prize lists that afford no useful information.

THE TEMPLE GARDENS.—Messrs. Broome and Dale have held their annual *levee*, and some little harm has been done by storms of snow and wind. Mr. Dale has been robbed of a large slice of his land for the erection of that beautiful building at the south-west corner which has been the subject of so much attraction lately; and now that the decorations and awnings are cleared away, the visitor who has seen nothing of the recent *Fête*, may very fairly judge how admirably this little inclosed space is adapted for a gathering *à la Watteau*. An artistic deviser of out-door *fetes* could do almost anything with that pretty plot of ground, viewing it as it now appears, gay with well-bloomed beds of pompones, the grass in good keeping, and the place altogether as clean and tidy as if it were secluded miles away from all possibility of invasion and traffic. But the initiated visitor, who loiters about admiring the flowers, and reckoning up the long and patient labours necessary to the production of such an agreeable result, can form no adequate idea of the difficulty of keeping the place in such trim from day to day, while the public are admitted freely; and with the adjoining garden of the Inner Temple, there is presented to the public, gratuitously, the best exhibition accessible anywhere in London. We have always considered Mr. Dale to hold a right pre-eminence in the display of his plants on the bedding system, and to Mr. Broome we have awarded highest praise for his culture of specimen flowers. This season the distinction has not been so visible as in former years. Mr. Dale had some beautiful specimens, and Mr. Broome some good beds. But, perhaps, the difference heretofore visible was not so much the result of any peculiar bent in the mind of either cultivator, but the consequence of diverse circumstances. Mr. Dale's garden is admirably situated for a display of pompones in beds—it is more sheltered than the other garden; and, on the other hand, he has no good position for specimens, as Mr. Broome has in that splendid border on the north side of the garden, where, "under canvas" his beauties now reign together in peaceful rivalry. We certainly have never seen finer beds than those of Mr. Dale's. As the frost has not utterly destroyed the flowers, the visitor may yet find on the left hand side of the garden, at the lower end, a very charming collection of specimen plants, including superb specimens of Queen, Themis, Trilby, Lady Hardinge, Madame Poggi, Novelty, Dupont, Christine, Hermine, Alfred Salter, and other favourites, old and new. These are mostly well grown and well shown; the colours true, and the flowers incurved, without the aid of gouging tools and tweezers, with which so many of the cut flowers at chrysanthemum shows are made to assume forms of fictitious excellence. Mr. Broome's show was a greater and grander undertaking. It was never better during the many years that the veteran was annually loaded with well-deserved praises. His specimens form a long bank, fronting the well-swarded lawn; they are arranged with admirable symmetry: the tallest plants at the back, on the full length of their legs; the next row is dwarfed, by pegging down; and thus to the front, where there is a well-contrasted line of pompones. In this border may be found nearly every good variety at present in cultivation, and not one out of its place. Among special excellences, we advise our readers to look out for Salter's Aimée Ferrière, a lovely incurved flower, silver-white, with rosy tips. Now, many a country gardener contents himself to obtain from that variety a few ill-shaped flowers of a confused blush; but in the midst of London smoke, Mr. Broome gets it true, and of great size and substance. So with Alfred Salter, we have seen it in four different shades, in the same flower show; but in comparing Mr. Broome's specimens, we could not discover one false to its original and proper character.

Lady Hardinge he has done most beautifully, and jealously guards his specimens with a polite request that people will not touch them. What a gem it is, and how it justifies the oft-repeated assertion that John Salter never yet sent out a bad flower. Others of peculiar beauty are Nonpareil, Annie Salter (gold yellow), Fabius (a dashing orange salmon), Golden Queen of England (a difficult flower to manage), Pio Nono, and *Stellaris globosa*. But as the varieties are carefully tallied, there is the less need for an enumeration of their names. The scattered groups of pompones in this garden are better than we have seen there for several years past. Indeed, for three seasons in succession, they were cut off by October frosts; and this mild autumn weather will, we hope, put Messrs. Broome and Dale in heart to return to the open-ground culture of this charming flower to as great an extent as the space of ground, and other opportunities at their command, enable them.

ROYAL HORTICULTURAL SOCIETY, Nov. 6th and 7th.—The grand exhibition by the Royal Horticultural Society, was held just a week too soon for the full display of the flowers peculiar to the season. This fact, however, was not apparent to the general mass of sight-seers, and even the critical observers of the relative excellences of the productions had few causes for complaint. The conservatory was made wonderfully gay, and all the details peculiar to the occasion being arranged under cover, the desperate rain and wind on Wednesday did not much interfere with the enjoyment of the large number of persons whom the *fête* brought together. On Thursday the attendance was much larger, owing to the improvement of the weather, which was as mild and sunny as April, and a large number of gardeners availed themselves of the one shilling admission. The chrysanthemums were generally well grown, and preference was given to plants trained in the fashion of pyramids, a form which is fast superseding the watch-glass form introduced by Mr. Holland, and adopted for many years past at all the leading shows. All the good old-established varieties were well shown, but Bob, and a few of the later kinds, were not full out. Some little interest was excited by the appearance of Mr. Turner as a competitor with chrysanthemums—a sort of compensatory process for his absence in the Dahlia Show. Mr. Turner took first prizes in the Nurserymen's Classes for six large flowers and six pompones. The Amateurs' Classes were well filled, the first prizes for six plants, and three plants (large), were taken by Mr. Ward, of Tottenham, one of the ablest sustainers of the Stoke Newington Shows. In Pompones, Mr. Hutt, another of the Stoke Newington heroes, came first. For six standards and six new varieties, Mr. Forsyth, of Stoke Newington, was first. The other prizes were shared between Messrs. South, Slade, James, Hope, Cattell, and Bird, three of these being of the old school of Newington growers. Fruit was abundantly shown, and among the most attractive samples were some gigantic, coarse-looking pears from Algeria. Respecting the quality of these, we are not at present prepared to offer an opinion; they looked fit, first to astonish the natives, and then to feed the pigs with. Some specimens of home prepared Normandy pippins and stewed pears were of much greater interest, and we obtained particulars of the mode of preparation, which we shall place before our readers shortly. Grapes, melons, pines, oranges, and orchard fruits were generally excellent, and all were shown on white Minton ware, which gave uniformity to the arrangement, and displayed the excellence of the fruits to advantage. The following is the prize list: *Fruit*.—Collection (fruiterers only)—Mr. Lewis Solomon, Covent Garden Market, 4*l*. Collection (private growers)—Mr. A. Henderson, Trentham Hall Gardens, Stafford, 6*l*.; and Mr. G. Tillyard, gardener to J. Kelk, Esq., Stanmore, equal, 4*l*. Pines, three distinct kinds.—Mr. Thomas Page, gardener to W. Leaf, Esq., Park Hill, Streatham, 4*l*. Single—Mr. J. Floud, gardener to R. Fothergill, Esq., Glamorgan, 2*l*. 10*s*. Grapes, white Muscat, basket of

10lb. weight—Mr. G. Tillyard, gardener to J. Kelk, Esq., Stanmore, 4*l*. White Muscat, single dish—Mr. G. Tillyard, gardener to J. Kelk, Esq., Stanmore, 2*l*. 10*s*. Any other variety, single dish—Mr. W. Hill, gardener to R. Sneyd, Esq., Keele Hall, Staffordshire, 2*l*. 10*s*. Black Hambro', basket of 10lbs. weight—Mr. P. Kay, market gardener, Finchley, 4*l*. Black Hambro', single dish—A. Henderson, Trentham Hall Gardens, Staffordshire, 2*l*. 10*s*. Frankenthal or Dutch Hambro', single dish—A. Henderson, Trentham Hall Gardens, Staffordshire, 2*l*. 10*s*. Any other variety, single dish—Mr. Thomas Page, gardener to W. Leaf, Esq., Streatham, 2*l*. 10*s*. Pears, desert, collection of one dish of each—Mr. A. Anderson, gardener, Oxenford Castle, Dalkeith, 4*l*. Collection of six dishes, distinct—Mr. Thomas Ingram, Royal Gardens, Windsor, 3*l*. Collection of three dishes, distinct—Mr. C. F. Harrison, Oatlands Palace Gardens, Weybridge, 1*l*. 10*s*. Single dish, any variety—Mr. Thomas Ingram, Royal Gardens, Windsor, 1*l*. Uvedale's St. Germain, single dish—S. Snow, [gardener to Countess Cowper, Silsoe, Beds, 1*l*. Catillae, single dish—C. F. Harrison, Oatlands Palace Gardens, Weybridge, 1*l*. Single dish, any variety—S. Snow, gardener to Countess Cowper, Silsoe, Beds, 1*l*. Heaviest five fruits, dessert—Mr. George Tranter, gardener to the Hon. G. D. Ryder, Hemel Hemstead. Pears, stewed, jar of—Miss Ingram, Royal Gardens, Windsor, 2*l*. Apples, dessert, collection of, one dish of each—Mr. John Newton, East Lodge, Enfield Chase, 4*l*.—*Chrysanthemums*: Six plants, distinct varieties (Nurserymen)—1st, Mr. Charles Turner, Royal Nurseries, Slough, 4*l*. Six plants, distinct varieties (Amateurs)—Mr. Ward, gardener to W. Fowler, Esq., Tottenham Green, 6*l*. Three plants, distinct varieties (Amateurs)—Mr. Ward, gardener to W. Fowler Esq., Tottenham Green, 2*l*. 10*s*. Six plants, pompones, distinct varieties (Nurserymen)—Mr. Chas. Turner, Slough, 4*l*. Six plants, pompones, distinct varieties (Amateurs)—D. Hutt, Margaret Place, Hackney Fields, 6*l*. Six standard plants, large-flowered or pompones (Open)—A. Forsyth, nurseryman, Stoke Newington, 4*l*. Six new varieties of the current year—2nd prize, A. Forsyth, nurseryman, Stoke Newington, 1*l*. Single specimen, large-flowered or pompone (Open)—Mr. R. South, gardener to G. T. Tyson, Esq., Upton, Essex, 1*l*. Twenty-four cut blooms, distinct (Nurserymen)—John Cattell, Westerham, Kent, 2*l*. Twenty-four cut blooms, distinct (Amateurs)—Mr. John Hope, gardener to Lady Buxton, Upton Park, West Ham, 3*l*. Twelve cut blooms, distinct (Amateurs)—Mr. Slade, 4, Rose Cottages, Kingsland, 1*l*. 10*s*. Six cut blooms, distinct (Amateurs)—Mr. R. James, Rochester Castle, Stoke Newington, 15*s*. Six cut blooms, anemone-flowered, distinct (Open)—Mr. John Hope, gardener to Lady Buxton, West Ham, E., 15*s*. Best group of cut blooms (Open)—Mr. Charles Turner, Royal Nurseries, Slough, 2*l*. Miscellaneous—Mr. J. H. Bird, Stoke Newington, for collection of chrysanthemums, 1*l*. 10*s*.

MR. SALTER'S CHRYSANTHEMUMS.—The show at Versailles Nursery has been better than ever this year, and Mr. Salter has some very promising novelties, a few of which, we feel assured, will take place beside the Queen, Lady Hardinge, and other of the most noted show flowers. The winter garden at this establishment is yet in good trim, the flowers far from exhausted, and those who have not yet paid a visit will find it remunerate them to do so for two or three weeks to come. The chrysanthemums are very tastefully set off by being grouped with fine foliaged plants, such as *Canna zebrina*, *Caladium esculentum*, *Wigandia caracasana*, *Yucca variegata*, *Centaurea candidissima* and *gymnocarpa*, the variegated strawberry, and others. Of new varieties for 1862, the following are among the best, viz., General Slade, Carissima, and Sparkler, all of which are Smith's seedlings; Miss Slade (also Smith's), pale sulphur; Cherub (Smith), golden amber incurved; Draco (Smith), fiery red; Dido (Smith), sulphur white, incurved, dwarf, and fine in habit; Lord of the Isles (Clark), incurved, rosy orange, very high centre; Saint George (Clark), golden yellow; Duchess of Wellington (Salter),

Lord Ranelagh (Salter) ; Mr. Brocme (Salter), large rose and lilac, incurved ; White Christine (Simmons), a sport from Christine, and valuable as a specimen plant : White Themis, a sport from that variety ; White Queen of England, also a sport. Among new pompones we noticed Acis (Salter), Capella (Salter), dark chesnut ; Citronella (Smith) ; Lucinda (Salter), rose and lilac ; Orange Boven (Salter), bright orange. These are in the shape of dwarf bushy plants covered with well-formed flowers. Other groups contained all the best varieties in general cultivation, among which the most conspicuous were Queen of England, Lady Hardinge, Boadicea, Little Harry, Golden Queen, Prince Consort, Alfred Salter, Jardin des Plantes, Pandora, Ariadne, Cassandra, Rifleman, Yellow Perfection, General Hardinge, Novelty, Leon Leguay, Aimée Ferrière, Golden Hermione, Bouquet des Fleurs, Gluck, Progne, Étoile Polaire, Garibaldi (Clark), Caractacus, Yellow King, Alma, Nancy de Sermet, Le Prophète, Dr. Rozas, Wonderful, Christine, Madame Sentir, Calliope, Florence, Shirley Hibberd, Miranda, Andromeda, Mrs. Turner, Miss Julia, Diana, Fanny, Ida, Mrs. Dix, Mr. Astie, Madame Chalonge, and Julie Lagravère. Of these there are numbers of beautiful examples, and being neatly arranged, they have an excellent effect.

PEACE IN A GARDEN.

A LITTLE gleam of that peace and purity which hung over the *old* Paradise still hangs about a garden. Quaint old thinkers have said their say as to the reasons why our first parents were placed in the *garden* of Paradise. The *new* Paradise, which we all hope to reach, is to be a celestial city, and will be adorned with untold and unimagined splendours ; but in the new birth and glory of the year, when spring leaves and flowers hang out their beauties upon

every side, the mind is apt to revert to that old one in which the first man walked and talked with God, and was therein instructed by Him in the wealth and wonders of his new possession—the earth around him ; and, perhaps, even now, in the midst of rural solitudes and garden shades, the works of man seem further distant and those of God nearer than elsewhere.—*Family Herald.*

PORTULACCAS SELF-SOWN.

I OBSERVE the remark of a correspondent on the subject of portulaccas, in which he expresses some degree of surprise at their reappearance this year, especially after such a winter as the last of our experience. Now, in confirmation of such a fact, I may mention that I am in the habit of sowing samples of many things, and amongst them the different varieties of portulacca, and almost invariably, wherever they happened to be sown, they reappear the following season, showing that they are as hardy as almost any of our common annuals.

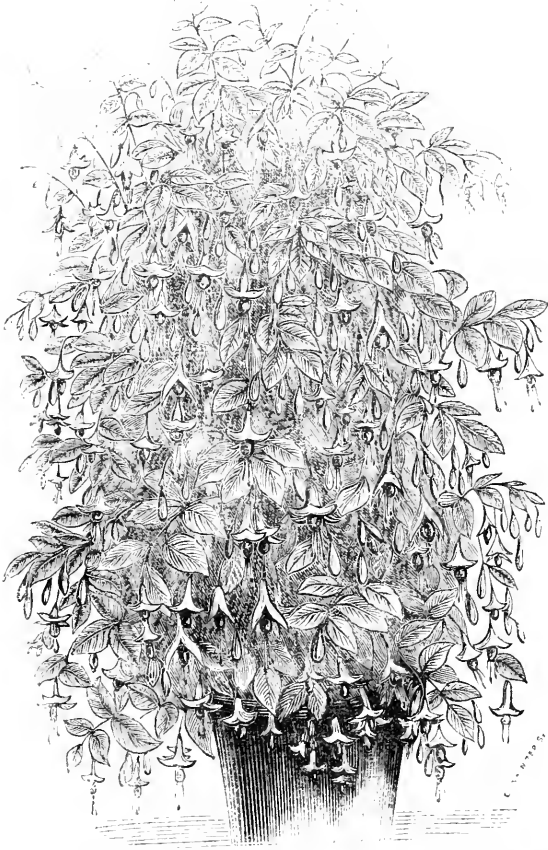
Another singular fact in connection with this flower has just occurred to me. Last spring twelvemonths I presented a friend with some seed to sow between rows of *Nemophila insignis*, when it was about half grown, in order to keep up a succes-

sion after the latter had gone off, but, to the disappointment of us both, it did not grow. But I was somewhat surprised, two or three months ago, at beholding the produce of the self-same seed beautifully in bloom, and almost as thick as one could have wished it to be ; thus proving its hardiness and retentiveness of the power of germination, at the same time showing that the non-growth of seeds is not *always* to be put to the seedsman's debit. The result of the circumstance has been seen by hundreds at Satney station, on the South Western railway, this summer, amongst whom are probably some of your readers, although they have not been conversant with the facts.

HOOPER AND CO.

Covent Garden.

SPECIMEN FUCHSIAS.



THE publication of Mr. Oubridge's "Essay on the Culture of the Fuchsia" has brought us many requests for a model figure, such as we have furnished our readers with in the case of pyramid and tabular chrysanthemums. As at this season of the year it is impossible to find a specimen plant in a fit state for sketching, we have reproduced a photogram of the first specimen plant grown by our excellent friend, Mr. Harrison,

who is now an adept in the art, and the winner of many prizes. Mr. Whimper has very faithfully rendered the character as in the original, and we think that with all the imperfections visible in the contour of the plant, its completeness and regularity offer an encouragement to beginners, such as perhaps the finished growth and training of a more perfect specimen might not do.

 SUBURBAN ROSES.

I WOULD beg to correct an error in my article upon Suburban Roses, in your November number—British Queen should have been Bourbon Queen. I do not know whether my manuscript or the printer was in fault. The past has been somewhat of an exceptional season for the Perpetuals, so that many which have been

shy of second blooms, may redeem their short-comings under more favourable conditions. Nevertheless, those that have done well are not likely in future to disappoint, and are consequently worth pointing out. I will therefore venture a few further remarks upon individual varieties, leaving those I have already mentioned to remain as I stated. In making these, I must disclaim any intention of dogmatizing, and confess myself open to correction by more experienced authorities. First as to the newer sorts. I have observed, where roses are largely grown, that Louis XIV. is a much more free bloomer in the autumn than Gloire de Santenay, and is, in my humble opinion, as fine a flower. The following, among the later introductions, also appear excellent autumnal roses:—F. Arago, M. Portemer, and I believe Empereur de Maroc. I cannot, however, speak decidedly as to the last. E. Appert I have not had an opportunity of seeing since the summer, but those I have named are sufficient among "the darkies" for any small collection. Of the different shades of rose, V. Verdier, Belle de Bourg la Reine, and Madame E. Verdier do not shrink from their duties beneath the autumn skies; while Admiral Nelson, M. Boll, with a few others of that class, are not to be trusted. Comtesse Chabillant also has been very shy of her favours, together with his scarlet eminence, the Cardinal, disgusted perhaps at the honour shown to the Solferinos, Magentas, and Victor Emmanuels, which have in some degree cast him into the shade. Of the older sorts, besides those I have formerly mentioned, Oriflamme de St. Louis and Beaux Arts partake of the free habits of their progenitor, the General, and are certainly *just* about town; an advantage in flowers, though not in the human species. Prince Leon is still unsurpassed in every good quality that a rose can possess; Duchess d'Orleans, Madame de Cambaceres, Madame Knorr, J. Lafitte, Apolline, and M. Damage, I have also found satisfactory. On the contrary, L. Odier, Acidalie, B. Prevost, Paxton, M. Vidot, W. Griffiths, Alexieff, and d'Angleterre, and several

others of high standing, have been altogether the reverse. Abd-el-Kader and most of the dark novelties appear to me to be merely slight modifications of Beaux Arts and Patrizzi, and by no means equal to the older Reveil, T. de Paris, and many of that class.

If not trespassing too much upon your space, I should like to make a few observations upon Rose Catalogues, several of which lie before me. Mr. Cranston's I consider by far the best, both for systematic arrangement and fulness of description. The introductory remarks are very interesting and instructive; and the habit of each variety is stated in a separate column, a great assistance to the amateur. Mr. Cants' catalogue for this year follows the same plan, though his lists and descriptions are not so full as Mr. Cranston's. Messrs. Fraser's is very copious, but lacks the feature of specifying separately the habit of each sort; were that supplied it would be excellent. Messrs. Woods' is open to the same remark. Would it not be a great improvement were the letter T, or some distinctive sign affixed to the sorts suitable for the neighbourhood of towns? Mr. Rivers' catalogue for this year is very meagre, and he has carried the not undesirable process of "weeding," when done in moderation, to the extent of placing many of the best roses in the second list, such as E. Appert, d'Angleterre, and others certainly better than some inserted in the first class. The size, too, is inconvenient for binding up with others; a great drawback, for a collection of good catalogues forms a valuable and interesting addition to a floricultural library.

One word more to my fellow-amateurs. Buy of the *growers*. The plants will then have only *one* check, instead of being moved from "pillar to post," as is usually the case with those procured from suburban nurserymen, who do not cultivate for themselves. I once bought a dozen of such, every one of which died before the summer was over.

PRIOR.

Homerton, Nov. 15th, 1861.

THIS SEASON'S BULBS.

ALTHOUGH much has been already said upon the selection of bulbs, experience proves that current information is more likely to make the desired impression than that which is laid in the volumes of by-gone years or in the tomes of standard publications. First, then, your amateur readers need scarcely fear that they will obtain bulbs that will not bloom satisfactorily this year, for, generally speaking, they are thoroughly well ripened and in firmer condition than they have been for

many years past. In the selection of hyacinths, it does not by any means follow that a fine, large, fat-looking root will produce a fine truss of bloom. As a proof, last year the roots of L'honneur d'Sassenheim were very large and fine, the result of luxuriant growth induced by the excessive wet of the spring of 1860, but the spikes of bloom were, as a rule, poor and thin; this year bulbs of the same sort are not above half the size, but they are thoroughly ripe, with conical crowns, and promise a fine bloom. Some of the finest hyacinths are not so much grown as they should be and as their merits deserve, because they have either small or unsightly roots. *Porcélin Sceptre*, one of our finest single blues, invariably has a cracked and deformed root; *Nimrol* is always small, though producing the handsomest and largest truss of any hyacinth I know; *Comtesse de la Coste*, double red, *Sultan Achmet*, double white, both magnificent hyacinths, are generally miserably small, more especially the first-named, which operates very much against their sale with those who are guided only by the appearance of the roots without any

knowledge of the flowers. In two or three words, select roots that are hard and firm—the more conical in shape the larger the truss is likely to be—and let size be a secondary consideration. Tulips, as a rule, this year are rather small, but they are as brown as a chestnut and as hard as Brazils, and therefore indicate a fine show of bloom either for pot or the open ground. All the other bulbs are equally well ripened this year, and purchasers need not be alarmed if they are a little behindhand this year, as it is very likely those who are served the last will fare the best. All such things as *Tritonias*, *Ixias*, *Iris pavonia*, *Brolliet congesta*, *Camassia esculenta*, are beautifully ripened this year, and cannot fail to give satisfaction to purchasers if they on their part use the proper measures to secure the desired results. I should prefer you did not attach my name to these few desultory remarks, lest I should be thought angling for custom, but if you think them of any value let your readers have them.

WILLIAM CHITTY.

[The name is a guarantee to the reader, and must appear.—Ed.]

DISSECTING LEAVES.

STEP the leaves, seed-vessels, or other parts of the plant which are required to be dissected, in rain water; leave them exposed to its influence until the whole of the soft or pulpy matters are decomposed. The period required for this operation varies much in different leaves, etc., according to their texture; thus, some require but a few weeks, others as many months. When the pulpy parts are completely decomposed, the next operation consists in their removal from the fibro-vascular network with which they were originally connected. This requires much care and patience. There are two ways of accomplishing it; one, which consists in carefully exposing them to a stream of fresh water, using at the same time a brush; and the other by simply placing them in fresh water, and removing with care the decomposed portion, in like manner, with a brush. Some difficulty will be found at

first in doing this without, at the same time, breaking the fibro-vascular network; but a little practice will soon render it easy of accomplishment. The adoption successively of simply fresh water, and a stream of the same, applied by means of a syringe, will be frequently found desirable. The pulpy portions having been removed, and the fibro-vascular network obtained, the latter must be then bleached. For this purpose, prepare a weak solution of chlorid of lime, by adding about an ounce of a strong solution of that substance to a quart of distilled water; then soak the skeletons in this solution for some hours; generally three or four will suffice, but when they are very thick a longer period will be necessary. After this operation has been performed, wash the skeletons thoroughly in pure water, and, lastly, dry them by freely exposing them to light and air.—*Pharmaceutical Journal*.

FREE GARDENS FOR THE POOR OF GREAT TOWNS.

(Abridged from the *City Press* of October 5th and 19th.)

WE have had innumerable proposals for measures of relief to the poor of London, many of them tending to the destruction of their independence and their thrift. But what an ennobling work it would be to establish free gardens for the poor, where they might see the blue heaven that has been hidden from them all their lives, by the grim walls of their own tenements and the clothes hung out to dry across the chink of a lane or alley, where they hide themselves and their poverty from cynical observers. Would they refuse the boon? No! The masses were never freely admitted to the view of beautiful objects, but they have shown by their demeanour that they know how to respect the benefit conferred, and protect a privilege conceded to all. The "mob" of Paris is a far more turbulent and uncontrollable body than the "mob" of London; but there no difficulty has been found in preserving intact the beauty of out-door scenes to which the people have been freely admitted. But let us be rid of the unsavoury word we have used; only the industrious, sober, and thoughtful of the masses of the people would care to enjoy the pleasures of a public garden, and the nature of the exhibition would operate as a means of selection between the sheep and the goats. On the inauguration of the park at Monceaux, all the gates were thrown open to the crowd, and no surveillance was exercised over the fifty thousand persons who thronged the walks and alleys. "But," says the *Constitutionnel*, in its account of the proceedings, "at the end of the day, the damage amounted to only forty-five francs, for the turf trampled down along the edges;" a proof that perfect freedom begets respect, and that the silly fears once entertained of the destruction that would be inflicted on trees and shrubs by the working classes have no foundation in fact now, whatever may have been the case in times past. Give them to understand that these trees, shrubs, flowers, and grass-plots are their own property, and self-interest combines with self-respect for their conservation.

As to the facilities that exist in London, they are equal any way to those of Paris. We have a moister atmosphere, and could grow the ailanthus better than the Parisians, who know nothing of its true beauties yet. Elms die in London through

exhaustion of the dry soil, and so they do in Paris. The *Platanus acerifolia* thrives amazingly in both cities, and the lime is not so unmanageable as it is sometimes described; and it shows a blink of green earlier in the year than any other City tree. The horse-chestnuts that are dying in the Champs Elysées and the Tuileries would make a much better figure in the grounds of Lincoln's-inn, though its gummy exulations are fatal to its extensive use as a town tree. The robinias in Paris are generally fine, and pity we have not a few in some of the larger graveyards of the City, where they would grow magnificently, bloom profusely, and shed their leaves all the summer long, without harm to any one. This would be a capital City tree, because of the litter it makes on the ground underneath it. We should not be able to bear the sight of a daily strewing of dead leaves, and the broom would be put to use where it is an unknown implement at present. Equal facilities, larger means, and a greater need, place London far behind Paris in this respect, and give us cause for shame that, in the cultivation of art, we have neglected the true basis of art—the observation of Nature. Let there be no more bewailings that the French outstrip us in artistic and fancy productions. French goods take the lead in the market, because French artizans are educated in a truer school; they are familiar with the forms of flowers and foliage traceries; and there is a truth and excellence about their fancy works that thrusts English productions in the shade. We have but to establish gardens in the midst of our cities to enable British industry to compete successfully with the foreign workman; and, while raising the tone of productive occupations, we shall also improve the health and morals of the people.

Those of our fellow-citizens who have been in Paris lately will better appreciate the need of gardens in London, than those who drone on from year to year, under the shadow of grimy walls, and suffer a decay of all their old sympathies with natural scenes in the pursuits of business. Paris is fast becoming as famous for its gardens as for its architecture, its gas-light gaieties, and its military *fiétes*. The Boulevard de Sebastopol, with its cheerful lines of trees, is an example of what the Exhibition-road, at Kensington, might become; and even

within the very verge of the City of London there are spaces which might be similarly planted. But in Paris is being accomplished one of the noblest acts of amelioration, in the formation of squares and gardens in the districts that are chiefly inhabited by the poorer classes. This is done for the double purpose of affording a relief from the monotony of City life to persons whose means are not sufficient to enable them to reach the Tuileries, the Luxembourg, or the Bois de Boulogne; and also to purify the atmosphere, on which such heavy demands are made by the dense masses of breathing humanity. In London the best trees, squares, and gardens are to be found in the districts tenanted chiefly by the rich. Fashion hovers about the parks, the wealthy practitioners of the learned professions take possession of the squares and the inns, where gardening is considered one of the essentials of existence; but in the districts inhabited chiefly by the poor, you may travel till footsore without being once refreshed by the sight of a tree, "shaking its million leaflets in the sun," or a patch of turf on which the shadow of the tree may fall without being marred in its beauty. But in the best view of the matter there is a large residue of dilapidated squares "so paltry that they might be said to have been blown there by the wind;" and, for the sake of a few pounds' expenditure, first-class properties are allowed to degenerate, which, with the help of a little gardening, might be kept at their proper value as places of retirement, congenial to classes removed out of the ordinary bustle of trade and commerce. Give us more trees, and the spaces on which they are planted will be preserved from the invasions of the builder; we shall thus obtain more light and more air, and the air will be more wholesome, because purified of smoke, dust, carbonic acid, and the fumes of sulphur. But why are our few squares so hermetically sealed against the populace? Why are the poor, who cannot afford the price of a railway-ticket or the time for a journey, shut out from these accessible places of recreation? They are private property, and we have not yet got so far in popular ethics as to recognize the true relationships of private property to the public weal, else we should see poor mothers leading their children along the walks of squares and gardens, in the innocent enjoyment of the best substitute for Nature which Art can produce in the midst of a city. In Paris, the Government has shown a paternal regard for the happiness of the citizens, whatever may be said as to its political policy. There is the

square of St. Jacques-de-la-Boucherie, on which two million francs have been expended, open to all. Public promenades are being established, and Paris is becoming not so much a city of gardens, as one great garden, with a city scattered through it.

Nor is it true that the conditions requisite to the growth of trees in London no longer exist. There are already a sufficient number of healthy, handsome specimens to prove that at least some species are capable of enduring the manifold evils of City life, to the same extent that human beings get inured to smoke, dust, and perpetual twilight. The *Platanus acerifolia*, and its several handsome varieties, are unsurpassed for beauty; if we had our choice of all the trees in the British *Sylva*, we could have nothing better than that for majesty of outline, richness of foliage, and capability of resisting influences which would annihilate many other species. The poplar, lime, horse-chestnut, maple, Hawthorn, ash, robinia, syringe, catalpa, Paulownia, are all, more or less, adapted for planting in the City—the smoke will not kill one of them. The majority of the inclosures where they might be planted are neither over-drained nor poisoned with gas-pipes, and though the soil may be stale, and sour, and pasty, a judicious application of manual labour would soon bring it into a condition suitable for planting; so that we might have verdure and umbrage, if we could not hope for flowery paradises. In the selection of species and varieties, those who have had the least experience in City gardening may fall back on a rule to guide them in the lack of experience; and the rule is, that trees with hard shiny, leathery leaves, are the best for this purpose, and those with soft, porous, absorbent, or woolly leaves, the worst. Thus it happens, that many of the most beautiful evergreens thrive in the closest and smokiest districts, because their hard polished leaves resist the effects of soot and dirt, every shower washes them clean, and all through the dreary winter they cheer the eye with a glimpse of greenness, and remind us that it is not winter all the year round, and that the world is not yet wholly covered with brick and stone buildings. That most beautiful of all our hardy evergreens, the phillyrea, is as patient under smoke as an old mill-horse is under the constant temptation to giddiness. It grows slowly, requires no pruning, is always bright and cheerful, and may take the place with us of the paternal laurels that adorned the inner courts of patrician Roman households. The *aucuba*, *Berberis*

aquifolium, and Darwinii, the tree-box and noble Buxus Balearica, the berry-bearing Cotoneaster, the evergreen Cratægus, the glossy Euonymus japonica, the common green holly, the holly-leaved oak, and the stately lauristinas, are all adaptable to City life. Where they perish, it will not be through the impurity of the air, but through the miserable plan of planting in the first instance; for it is too often the case, that in planting trees and shrubs in the City, it is thought quite sufficient to open a hole, jam the roots into it, and then tread the soil over till it is as hard as a brickbat.

Unfortunately, in all *English* towns, there is a prejudice against trees. The only popular thought respecting them is, that they ought to be cut down; though it is rarely that any one can assign a respectable reason why. Even in the suburbs of London, where green things are appreciated as the proper beautifiers of human life, and necessary adjuncts to the culture of domestic virtues, there is a malevolent spirit too often exhibited in the ruthless destruction of trees that never harmed anybody, but have blessed successive generations with their "shady boon" and summer rustling, and incessantly acted as purifiers of the heavenly breezes that had been corrupted by coal smoke. Rarely do we hear a word in their defence; still more rarely a word of encouragement as to their improvement; never a suggestion that a few more might be planted for purposes of decoration, and to warm up the cold, stony outlines of our great highways. A little litter in autumn, which a broom would remove, is thought a sufficient reason for destroying at one blow the growth of a century. The paltry complaint of some bald-headed churchwarden, or old inhabitant, that the tree at the corner shuts out the light of the gas-lamp, and renders him liable to be murdered at his own door, is enough to procure a doom for it; and, where wholesale destruction is not encouraged, the jobbing gardeners are ever hankering to use the saw and the bill, to render the trees in suburban gardens unsightly spectres and stunted scrubs. Pity the sorrows of a poor old tree, whose trembling limbs make shadow at your door; and inculcate in the minds of this generation a

better regard for trees, as proper furniture for open spaces in the City.

When the senseless prejudice against trees has been annihilated by arguments founded on their beauty and use, we are next assailed with the assertion that to grow trees in the City is impossible. The excessive drainage necessary for the public health does certainly suck out of the soil the moisture that large trees require; the daily diffusion of coal smoke and commercial dust is certainly detrimental to vegetable life; but these are reasons for encouraging the growth of trees, not for sweeping away the few that remain, and refusing to plant more. The utter dryness of the soil, and the contamination of the atmosphere, are evils which operate to the prejudice of the public health, and every living tree is an agency for mitigating those evils; the leaves of the tree disseminate a wholesome moisture, and they abstract from the air much of its mechanical and chemical impurities, so that the sad circumstances that are made an excuse for sweeping vegetation beyond civic boundaries, offer most cogent reasons for its more plentiful distribution and encouragement. But these quasi-philosophical arguments against London trees are to be classed with the silly prejudices against trees because of an occasional sprinkling of dead leaves and interception of the light from somebody's gateway. We go into the country to regain our health. We hurry into the midst of verdure to obtain physical refreshment from the great brewery of oxygen, which a merciful Providence has established in connection with the growth of the fruits of the earth; and, while the lungs absorb the life-giving gases poured out abundantly from the tissues of plants, the mind and heart rejoice in the pictures of beauty which vegetable forms present to us in exhaustless variety. Yet we return to our mural dens, and give orders to cut down trees, that not a green leaf may wave between us and the sun while we sign checks and count money. The dirty, neglected, sour condition of the little plots of open ground in the City would indicate that vegetation in a town had some poisonous influences, or else that money-getting had extinguished the most active of human sympathies, and established a new code of public asceticism.



ARE WEEDS OUR FRIENDS OR ENEMIES?

SOME fifteen or sixteen years ago I went to work in a garden that had been abandoned to weeds for four years, in consequence of the house and premises remaining for that time untenanted. The man who had formerly had the management of this garden left word, through the medium of the next door neighbour, and for the edification of his successor, that "seeds were thrown away on that 'ere ground; that peas and beans never bore anything; that cabbages and broccoli all clubbed off; and that taters, carrots, parsneps and them things came to nothing." This was by no means encouraging, but the neighbour assured me it was a fact. However, a garden is a garden all the world over, and I was set to work under the supervision of one who was employed elsewhere the greater part of his time. I being too young at the time to be trusted without a guide, my duties were to dig, to plant, and to sow, and supply the family with vegetables. It was early in January when I began operations, which consisted in pruning, burning, manuring, and trenching. These occupied the first month; in the second some early peas, beans, etc. were got in; in the third month there was a general cropping. As the seeds came up, so came up weeds in vast quantities; but the latter were chopped up, greatly to the benefit of the young crops, which were improved by the ground being stirred between. Now I happen to think that weeds do us considerable service in making their appearance among young crops where they are not wanted; they tell us, in unmistakable terms, that the hoe must be set to work; and this not only destroys the weeds, but loosens the surface of the soil, and refreshes the plants, admitting air and moisture freely to the roots. If weeds did not appear this important operation might in a great measure be neglected.

But to proceed. The first crops gathered were lettuces and radishes; they were fine, but excited no comment, but when peas and beans came in they were remarkably fine and good, and all through the season it was noticed by all who saw them (particularly the next door neighbour) what excellent crops were produced on the same ground that a few years ago would produce comparatively nothing. Potatoes yielded most extraordinarily, other root crops were fine in proportion. Legumes bore abundantly, and were well flavoured, while not a trace of club was discernable amongst

the various Brassicæ. Some old strawberry-beds that had been smothered with weeds were cleared, and bore amazingly. The old asparagus-beds were served the same, and the heads came up stout and good. Everything was more than satisfactory, and this was the case for several years that I remained there. If an idea entered my young head at the time that any of these results were due to my particular style of gardening, it has been crushed and dissipated long since, for I have found that other gardens wherein weeds have not had a month's, much less a year's grace for half a century or so, will not or cannot produce such crops, and this in spite of manure, trenching, and careful rotation. I have been in kitchen gardens where weeds are never suffered to grow three inches high, and where the most approved operations are adopted, and where manure is supplied in suitable quantities, and yet a good cabbage or cauliflower is the exception, and diseased roots the rule; where wireworm, aphids, and caterpillars predominate, and where a really profitable crop is almost unknown; and yet in an adjacent market garden, which a few years ago was a meadow, vegetables acquire that firm stocky habit that indicates the soil is in good heart, although it receives very little manure; and often large patches are covered with weeds, which are ploughed in, and again profitable crops are obtained. These are positive facts, and by putting that and that together it is possible to arrive at some conclusions which may be useful to those who year after year are making futile attempts to obtain profitable crops from exhausted soils.

It is needless, even were I able, to enter learnedly into the composition of soils, or the particular substances extracted by plants, or even the manner in which they extract them; but if I find in the course of practical experience that soil having been for four years monopolized by weeds has passed from a state of sterility to one of fertility, I am justified in believing that weeds act beneficially as restorers, either by the extraction of deleterious matter, or in aiding the decomposition of dormant earthy matter, and fitting it for more active appropriation by cultivated plants. It is not improbable that plants indigenous to the soil, such as weeds are, should possess this power to a greater extent than plants of more artificial origin.

It is well known that plants growing

year after year on the same soil extract the necessary aliment for that particular genus, and consequently decrease in size and vigour. It is also palpable that diseases follow in the same ratio. Now a mere excess or deficiency of proper aliment does not produce disease; an over-fed animal gets fat, an over-fed plant grows more vigorously, while either an animal or a plant may die of starvation without showing any undue symptoms of derangement. If an animal takes with its food any deleterious matter such as is foreign to its requirement, a derangement of the system is the result. It is the same with a plant, which having exhausted its proper aliment takes up matter that is not suitable for it—ill health is the consequence. I have noticed that it is upon poor and exhausted soils that plants are most subject to aphid, canker, and club. It is well known that plants of different genera require different kinds of food; that some plants will flourish where others will not; that soil which has been exhausted by one crop is in condition to produce one of another kind: hence the value of a rotation of crops, of more real effect in agriculture than horticulture; for although it is really advisable to follow a system of rotation in vegetable culture, yet kitchen crops being so nearly alike in texture and substance, no very extraordinary results can be expected from it. The farmer can alternate Leguminosæ or Gramineæ, and I believe the latter would act most beneficially as an alternative crop in the kitchen garden, but there is no plant of that order used as a culinary vegetable, so that it is only by allowing

grass or other indigenous plants to grow, that anything differing largely from kitchen crops can be brought into play. I would recommend those who find that their soil does not produce really profitable crops, and who complain of the prevalence of pests in the shape of fungus and animalcule, grubs and aphid, canker and diseased roots, to try weeds for a year or two; not as the Irish potato grower does, who abandons his soil to weeds, and neglects manuring altogether. But let the ground be planted with gooseberry and currant bushes, raspberry canes and bush fruit-trees; let the weeds grow amongst them, mow them sometimes to prevent their seeding, and bury them annually under a good mulching of dung; but do not dig except for the purpose of root pruning, for these things bear best if the fibres are allowed to run near the surface. In a few years these would be worn out, and the ground in excellent condition for growing cabbages, broccoli, etc. I am no advocate for allowing weeds too free a scope amongst growing crops, as this would be altogether inconsistent with good gardening; but I believe they have their uses, just as birds which eat our peas and pull up our seeds but destroy innumerable insects. What may appear at first as impediments, may be in reality assistants; to scowl upon weeds as troublesome pests, and wishing their entire extermination, is wishing against our own interests; it is far better to value them for their uses, and regard them as harmonizing with the whole system of Nature.

F. CHITTY.

CULTURE OF THE HYACINTH IN POTS.

We repeatedly see examples of mismanagement in the cultivation of this truly beautiful plant; in nine cases out of ten which come under our notice, the hyacinth is not well grown, for most cultivators seem to grow it too rapidly, and subject the roots to a course of treatment the opposite to which it should have.

We pot early, as soon as possible after the roots arrive. We especially avoid the cheap market, for this reason, the most noted growers in Holland have their regular customers whose orders they are certain of receiving, and therefore do not take up their roots until they are thoroughly matured. This is a highly important matter to the cultivator, and we therefore caution amateurs not to think that by pur-

chasing cheap priced bulbs that they are getting the best. The soil we use is chopped loamy sods and rotten manure in nearly equal proportions, with a plentiful supply of leaf-soil and sand, using no crocks. We pot deep, allowing the crown to be level with the soil, and pot very firm. They are then well watered and placed underneath a greenhouse stage and are not plunged. We object to plunging for this reason, that it too often happens that the roots are allowed to remain in the plunged bed longer than they should, and have often pushed a couple of inches of growth before they are removed. This produces weakness of foliage at the collar, and instead of the foliage being stiff and robust when the growth is matured, it falls over the side

of the pots, not having the necessary foundation for maintaining its natural position. The great use of plunging is to keep the root from being forced out of the soil by the action of the downward progress of the root, but we avoid this by potting firmly round the crown of the root, and we seldom have a root springing out of the soil; if one does, it is easily replaced. As soon as the crowns have pushed about an inch in length we remove the plants to a frame or greenhouse and place them close under the glass, keeping them moderately watered and encouraging them in making roots in preference to foliage. We avoid placing them in warmth until the buds are developed, and then only when early flowers are wanted; but the hyacinth really does not like heat, and it is better to be satisfied with a late bloom and get it fine. Whilst the plants are growing keep them near the glass where there is ventilation, and when the buds are fully developed, apply weak manure water freely.

Really good kinds, such as the following, can be procured at from six to eight shillings per dozen, for sound well ripened roots.

CARMINE, PINK, ROSE, AND BLUSH.

Double Varieties.—Grootvorst, beautiful blush, fine; Perruque Royale, a very fine rose coloured variety; Waterloo, deep carmine, a very fine variety.

Single Varieties.—Belle Quirine, pale flesh, beautifully striped with carmine, very large bells, very fine; Lord Wellington, deep blush striped with pink, fine; Madame Hodson, light pink striped with deep pink, a bright and good variety, with finely formed spike; Madame Maintenon, light carmine, very fine.

BLUE AND PURPLE.

Double Varieties.—General Antick, pale lilac striped with deep lilac and suffused with blue, a beautiful and very fine variety; Grand Vedette, light porcelain blue, a handsome and fine variety; Mignonne de Dryfont, lighter than Emicus, large spike, a fine variety; Prince Frederick, striped bluish lilac, a beautifully coloured fine variety; Prince of Saxe Weimar, dark purple, large close spike, fine.

Single Varieties.—Baron Von Thuyll, dark porcelain blue, large bells, very fine spike, extra fine; Charles Dickens, dark porcelain blue, large bells, very fine spike; Emicus, dark blue, with light centre, large close spike; Prince Albert, rich glossy blackish purple, large bells and large and very close spike, a very fine and most beautiful hyacinth; Prince Oscar, striped deep

porcelain blue, large bell and spike, very fine; Prince William I., dark purple, close spike, fine.

WHITE.

Double Varieties.—Anna Maria, French white with purple eye, close spike; La Deesse, beautiful waxy white, distinct and fine; La Virginite, delicate blush white slightly tipped with pink, a very pleasing variety; Ne plus ultra, very fine white with large bells; Tour d'Auvergne, pure white, moderate size bells, large spike; Triumph Blandina, blush white, lighter than Grootvorst, a good variety; Virgo, beautiful waxy white, very handsome.

Single Varieties.—Grande Vainqueur, pure white, a fine and beautiful variety; Hercules, white shaded with rose, very fine; Prince de Galitzen, pure white, close spike, a very good variety; Voltaire, blush white, very large bells, fine.

YELLOW.

Bouquet Orange, brownish orange yellow, one of the best and most useful of the double varieties. Those who grow for exhibition, or do not mind paying from 10s. to 12s. per dozen for the finest hyacinths in cultivation, should select from the following list:—

CARMINE, PINK, ROSE, AND BLUSH.

Double Varieties.—Lord Wellington, a beautiful waxy blush-coloured variety, a handsome and very fine variety; Waterloo, deep carmine, a very fine variety.

Single Varieties.—Belle Quirine, pale, flesh, beautifully striped with carmine, very large bells, very fine; L'Étincelante, bright carmine, very fine compact spike, extra fine; Lord Wellington, deep blush, striped with pink, fine spike; Madame Hodson, light pink striped with deep pink, a bright and good variety, with finely formed spike; Madame Maintenon, light carmine, very fine; Mrs. Beecher Stowe, shaded pink and rose, very close fine spike extra fine; Norma, waxy pink or flesh colour, very large bells and spike—one of the finest and most beautiful hyacinths in cultivation; Ornament de la Nature, beautiful pale rose, large, and very fine; Robert Steiger, fine deep crimson, large bells and fine spike; Sultan's Favourite, delicate blush with pink stripes, large bells, and very fine spike, extra fine.

BLUE AND PURPLE.

Double Varieties.—Blokberg, pale lilac striped with pale blue, large bell and large spike, extra fine; General Antink, pale lilac striped with deep lilac and suffused with blue, a beautiful and very fine va-

riety; Grand Vedette, light porcelain blue, a handsome and fine variety; Laurens Koster, shaded purple and blue, large close spike, an exceedingly fine and handsome variety; Sir John Franklin, shaded porcelain blue, large bells and spike, very fine; Van Speyk, a very fine variety, light porcelain blue, with large bells and very fine spike.

Single Varieties.—*Couronne de Oulle*, light porcelain blue, a splendid variety, with large bells and very large spike, extra fine; *Grand Vedette*, light porcelain blue, large bells and full spike, fine; *Grand Lilae*, delicate azure blue, with large bells and very large spike, a beautiful and very fine variety; *La Surpassante*, rich blue purple, a distinct and beautiful shade of colour, close spike; *Lord Raglan*, shaded porcelain blue, darker than Charles Dickens and *Regulus*, large spike, extra fine; *Prince Albert*, rich glossy blackish purple, large bells and large and very close spike, a very fine and most beautiful hyacinth; *Regulus*, shaded lavender and blue, large bells and very large spike, an exceedingly fine and beautiful variety; *Uncle Tom*, very dark blue, extra fine.

WHITE.

Double Varieties.—*La Deesse*, beautiful waxy white, distinct and fine; *Princess*

Alice, a very fine and handsome new variety; *Queen of England*, white with bright pink eye, fine.

Single Varieties.—*Elfrida*, beautiful pale creamy blush, very large well shaped bells, good spike, a very fine variety; *Grandeur* a *Merveille*, French white, with very large wax-like pip, and very fine close spike, a splendid variety; *Grande Vainqueur*, pure white, a fine and beautiful variety; *Grande Vedette*, a very handsome and fine variety, with large bells; *La Baleine*, white flushed with delicate flesh colour, large bells and good spike, fine; *Madame de Stael*, extra fine white, superior to *Grande Vainqueur*; *Madame Van der Hoop*, pure white, large bells and immense spike, an extra fine variety; *Voltaire*, blush white, very large bells, fine.

We have avoided the high-priced kinds, which range from 3s. 6d. to 10s., because they are really not worth the extra money, but bear these prices because the stock is limited. Many persons have a prejudice against *single* hyacinths, and absurdly object to *growing* them. If such persons had the experience of those who cultivate for exhibition and market purposes, they would very soon find out that the majority of our finest hyacinths are the single-blossomed varieties.—*Gossip for the Garden.*

STRAWBERRIES FORCED ON A NEW PLAN.

THE following method may be adopted by any who are preparing to force strawberries next spring, if their plants are now in pots with well ripened crowns. By this method finer forced fruit can be produced than by any other. I lay runners in the usual way, in 60-size pots, about the latter end of June; and here I will just state, that they should be layered, if possible, from one-year-old plants, that are very strong and healthy, as they will produce the best runners. I keep them well watered, repot the last week in July, or first week in August, in thirty-two's, or six-inch pots. Soil, turfy loam two parts, road sand two parts, cow-dung one part, with a sprinkling of soot; well drain the pots, and when potted off place them in a good open situation, fully exposed to the sun. I give them plenty of water, never allowing them to flag by any means. By October you will have strong plants, with large solid crowns, and the pots full of roots. Now they must be watered very sparingly, and kept almost dry, that they may ripen their crowns well, and go to rest. I pack them in ridges,

and well protect them in frosty weather. For early purposes, I plunge them in a pit, with bottom-heat, about 65° or 70°, and as soon as they show their buds, I plant them out in the troughs. The troughs are made of rough deal, from six to twelve feet in length (or any length that may be most convenient), eight inches in depth, seven inches wide on the top, five in the bottom, with holes in the bottom for the water to pass off. Over these holes I put large sherds, with their convex sides downwards, then small ones all over the bottom of the troughs. On these a layer of fibre, turfy loam, broken in pieces about the size of small hen's eggs: turn the plants out, remove all the drainage I can without injury to the roots. Plant them in the troughs, with a space of two inches between the ball of each plant. I fill up with three parts turfy loam and one of roads and, that has been well incorporated together, working in very solid around the plants with a short stick, or rammer, the crowns of the plants being just level with the top of the trough; place them on the back shelves of

the vinery, or in the strawberry-house: give them a good watering, with tepid water, and you will see the advantage of the trough over the pot. They will send their roots down in the troughs, and all around the sides, developing their beautiful glossy leaves, and sending up their immense trusses of bloom. I give plenty of air when they are in bloom, and they will set well; they will only require watering once a week in the troughs during the months of December, January, and February; and twice a week in March, April, and May, will be quite sufficient, which, I think, is a very great advantage over pot culture. Amongst extensive growers, and where labour is an important item in the spring, when there is so much to be done in every department, one thousand, or fifteen hundred, pots to be watered every day, and twice a day when very hot, will and does take up a very great amount of time and labour. For a late crop in troughs, the following plan may be adopted, and will produce a good crop, without the use of pots. Take off young plants, or runners, the first week in July. Make choice of those that have roots from half an inch to one inch in length. Prepare a bed, in a good open

situation, five feet wide, and any height that may be required. Make the surface of the bed when marked off, very solid, and put on a layer of good rotten stable manure, and cover with three inches of soil from the sides or alleys. Make the bed level, and plant one foot apart. Press the soil firmly around, and keep them well watered. They will soon make new root, and by the autumn will be strong plants. Take them up in March, very carefully, and plant in the trough.

The sorts that I cultivate are Keen's Seedling for early, and British Queen for a late crop. The troughs may be made ornamental, and placed on the side-board when the fruit is ripe, and no one will be in doubt, I think, as to their appearance. I can only say, I have grown strawberries for dessert, for the market, and the exhibition table, and have been a successful exhibitor, and I have grown them in different ways; but I have never carried such a crop, and grown them to the perfection as I have in the troughs, during the commencement of the present year.

J. SPARKES.

Gardener to W. Joynsen, Esq.

St. Mary Cray.

THE ART OF WATERING PLANTS IN POTS.

As I have a good deal to do in various ways with amateur gardeners, I have frequent opportunities of noticing their shortcomings in a variety of particulars. In ninety-nine cases out of a hundred almost, ladies and gentlemen who are excessively fond of flowers have a little plot of garden, perhaps a greenhouse and a frame or two, and bestow a good deal of time, money, and pains, do not realize the results they think they have a right to expect as the reward of their application. I think we may place some portion of the failure to the account of the want of tact, which Johnson defines to be "expertness and skill in the management of any affair; ready talent." Let something more go down to the lack of untiring vigilance, indomitable application. One single neglect of some particular item in the routine of management will sometimes render nugatory a whole year's attention. If the clock discontinues its ticking, notwithstanding the monotony of the process, family and business arrangements are thrown into confusion. Then, again, observation quite justifies me in saying, that, in very many cases, ~~soft~~ mould, injudicious mixture of soil, bad potting, and imperfect drainage, completely block

up the way to success. But the one great hindrance, on which I purpose for a moment or two to dwell, is injudicious watering. To be plain, there is no rule that can be laid down for watering plants in pots. Some persons ask, "Should not plants in pots be watered every day?" The answer is, "Every collection of plants in pots should be looked over every day, and those that are dry should be watered promptly and sufficiently." Let me explain what I mean by "sufficiently." When a plant is potted, there is a space between the surface of the mould in the pot and the margin of the pot; this is to hold the water necessary for the plant growing in the pot; if the space is pretty deep, say three-quarters of an inch, or an inch, this space quite filled up with water, will generally be enough for one dose. If the space is shallower, and the plant is very dry, it may be filled up two or three times, as the case may be, until the ball is thoroughly moistened. If the ball has got so dry that the earth has shrunk away from the sides of the pot, and the water, when poured in, runs away between the ball and the pot without penetrating among the roots, after the first dose has been given, draw the finger all round

the opening on the top of the soil. This operation, simple as it is, will detach mould enough to fill up the gap, and the water, which is afterwards given, will, instead of running away uselessly, permeate the entire mass of soil in the pot. And let it be remembered that this "sufficient" watering applies to winter as well as summer treatment; it is a mistake to give plants in pots that are dry only water enough to moisten the surface of the soil. Subjects that in the summer require copious supplies of water every day, in the winter-time perhaps will not want it more than once a week; but when they do have it, give them enough. I would also persuade amateur gardeners to adopt feeders, or saucers, or pans, or whatever may be the name by which they are locally designated; these will be found to be of incalculable advantage to many plants; not the glazed pans, but those of the same material and finish as the common garden pot. First of all, the water, which has passed through a pot of soil that has become dry, will be retained by the saucer, and will be absorbed by degrees, according to the necessities of the plant. Then, again, the pan itself absorbs a considerable quantity of the water, and furnishes a moist, cool bottom for the plant to stand upon, most grateful to plants of all kinds, and analogous to standing on a bed of ashes or sand out of doors, where they are always found to enjoy themselves.

Further, there are numbers of plants that positively delight to stand in water. Fuchsias, all through the growing and flowering season, begonias, arums, callas, ixias, many ferns, and other things, will amply repay by their luxuriant vigour the

indulgence of being permitted to stand in a pan of water.

Again, it will be a great relief to many an anxious cultivator, who leaves his home in the morning, and, as he takes a last look at his potted plants, to feel sure that, by leaving them a supply of water within their own reach, their necessities will be met through the length, it may be, of a long, bright, parching summer's day, to find, at his return home, after the toils of business, that his plants are not only not perishing from drought, but are, perhaps, considerably improved in vigour and beauty. Only, once more, let me say, that, in using pans, adapt them to the size of the pots, that is, let forty-eight-sized pans be used for forty-eight pots, and the same with other sizes, as it will be found that, if they are too large, they contain more water than can be absorbed by the plant while it is sweet, and if too small, will not contain enough.

I am afraid your readers will think I give them credit for very little knowledge, but it is because I know that a very large proportion are expert cultivators, that I can speak so plainly for the advice of beginners. But just another moment, while I place two or three guards around the practice I have been advocating. Let everything placed in pans be well potted, sufficiently drained, and filled with roots, and for innumerable subjects, such as roses in pots, vines in pots, orchard-trees in pots, fuchsias, and strong-growing and free-rooting things generally, this will be found a most satisfactory provision.

WILLIAM CHITTY.

Stamford Hill.

CULTURE OF THE TUBEROSA.

THE culture of *Polyanthes tuberosa* being found a difficult matter with many amateurs who highly prize the flower, we submit for their guidance a treatise originally communicated to the Horticultural Society by the late Mr. Salisbury. The importation of the bulbs takes place late in the season, when Dutch bulbs are mostly sold and planted.

For this purpose select a piece of ground that is perfectly drained, under a south wall; or, if this cannot be spared, defend it on the north by a reed hedge. The size of the bed must be proportional to the number of roots you want, for the same tuber never flows a second time, but only the lateral ones, which are produced in

great abundance round it; as they are to be planted at five inches distance from each other, a bed nine feet long by three feet wide will hold 144 roots. The soil which I have found them succeed best in, is light sandy earth mixed with one-third part of very rotten cow-dung; the earth should be taken about seven or eight inches deep, along with the green turf, chopping it very small with a spade, and turning it once a month for a year before it is used; if the earth is not very light, add a quantity of sea-sand, or fine shelly gravel. If you are obliged to use this compost sooner, pass it through a wide screen, casting out nothing but any large stones.

About the middle of April, prepare the

bed as follows:—First, take out all the old earth, to the depth of two feet and a half, or three feet, filling it nearly to the top with fresh stable dung, that has been cast into a heap to heat a fortnight before; lay the dung evenly in the trench, treading each layer very firmly down with a board under your feet, and reserving the smallest and shortest for the last. Upon this lay eighteen inches in depth of the compost, sloping it well towards the south, not only for the benefit of the sun, but to throw off violent rains. In a day or two after, plant your roots at five inches distance from each other, observing to place them alternately in the rows, and that the crown or upper part of the tuber is only just covered with earth. These should be the offsets of such as, after flowering the preceding year, have been preserved from frost through the winter in sand, as well as the strongest remaining upon any fresh imported ones; till you obtain a sufficient stock, even the weakest may be planted; but as a great number are annually produced by every root, in time those which are large enough to flower the following year need only be selected. Cover the bed at night, especially if frosty, with a double mat, till the leaves appear; but give little or no water, protecting it carefully from heavy rains. When the leaves are about an inch long, add a little fresh compost to the surface, filling up any inequalities, and removing all weeds.

If the season prove dry, it will now require watering, and towards the end of June, and in July, when the leaves are in full vigour, very copiously; but this must depend upon the weather. From this period till the beginning of winter, nothing more is necessary than to weed the bed, and protect it from the autumnal rains; this may be done by sloping the ground more up to it, or if you have a cucumber front not in use, it may be employed for this purpose, taking care to sink the front so low as to admit all the sun possible. About the first week in December take the advantage of a dry day, and after clearing

away all the decayed leaves, thatch the bed all over, and at the sides, a foot thick with dry straw, sloping it well to throw off the wet. About the middle of February, if not prevented by severe frost, take up all the roots, preserving their fibres, and pack them in very dry sand, in cellars where the cold cannot penetrate, till April, when they must be replanted as before, shortening their fibres more or less, as you find them decayed.

If the climate was even milder than ours, I should recommend the roots to be taken out of the ground, and preserved in dry sand, for it throws them into a complete state of rest, and disposes them to form their flower-stems earlier. Many offsets will by this time have made their appearance round each root, all of which, except two or three at most of the strongest, should be cut entirely out, and this operation must be in some degree repeated after they are planted and growing, as fresh offsets are produced: for, if permitted to remain, they will rob the other buds of sufficient nourishment. This second year some of the largest roots will probably flower; if they send up their stems early, it will only be necessary to stick them carefully, when about a foot and a-half high, and leave them to blossom in the open air; but when they appear later than July, they should either be removed into pots with a trowel, preserving all the fibres possible, and placed in a stove, or, if you have not that convenience, cut out the flower-stem, with all the central leaves, as soon as it is discovered, which will strengthen the offsets. In the succeeding winter, thatch the bed, taking up the roots in February, as before, most of which will now be strong enough to flower, and may be selected for sale, such roots, if wanted for early forcing, will have a decided advantage over imported ones; for, as their fibres will not be entirely decayed, they will push immediately on being removed into brisk heat, and may be brought to flower as early as May.

SEA-KALE.

THE time is now not far distant when gardeners will begin to turn their attention to their sea-kale beds, with a view to winter forcing; many will even be preparing to have a cutting ready for Christmas. If a gentleman give orders to this effect they must be obeyed; but it appears almost an improvident extravagance to consume the vegetable so early in the season, while there is such an abundance and variety of others

still remaining in the garden; one in particular (celery, if stewed) quite supplying its place upon the table. The time when sea-kale comes in most acceptably is during March and the beginning of April, when we are tired of winter greens, and have forgotten the taste of cauliflowers. By growing it on the following plan, it may then be had at less expense and trouble, and of far finer quality, than that produced by any method

of forcing; and no one who gives it a fair trial will afterwards relinquish it for main crops, although he may still choose to force a certain quantity for earlier supplies.

The sea-kale bed is to be planted in March, in straight rows five feet asunder; the plants in each row to be eighteen inches apart. It is, of course, understood that the ground be thoroughly trenched and manured as usual. Something, but not much, is gained by obtaining year-old plants from the nursery instead of sowing the seed in the rows, there to remain. By the first method you have a larger cutting the ensuing spring; but you may cut from your seedling plants, which will have suffered no check by removal, and will grow with corresponding vigour.

Some time in December, not too soon, when the foot-stalks of the leaves have fairly separated themselves from the crown of the plants, heap over each about a quarter of a peck of sea-sand or wood-ashes; if not to be had, any light unmanured soil will do. Then earth up the plants from a trench dug along the space between the rows, exactly as if you were earthing up celery, only that no leaves appear above the top of the mound. The earth should be heaped up till it is about two feet above the crowns of the plants, and then flatted down with the back of the spade, and the whole made very smooth and neat. The long trench between the rows of sea-kale will act as a drain during the dead time of winter. In the spring, when the shoots begin to push, large cracks will be seen in the bank of mould, and a trial may be made with a trowel, as soon as they are supposed to be sufficiently advanced for cutting.

The sea-kale thus obtained is larger, more succulent, and more delicately flavoured than that blanched under pots. In one case the growing shoot is constantly in contact with the damp mould, and absorbs moisture instead of parting with it. In the other, the kale is subject to all the influences of air, though excluded from those of light, from which, however, it is only protected by a porous, imperfectly-closed vessel. All the expense of pots and manure for forcing is saved; and the only objection to the adoption of this plan in all cases, is, that the crop comes in too much at once. But by having rows of kale in different exposures, a difference of at least ten days may be made; and a few plants at the foot of a south wall, earthed up from the border, and merely so covered with mould that it slopes against the wall, will afford a very early gathering.

No second cutting should be attempted; not so much for fear of weakening the

plants, as because the weak shoots thus obtained are comparatively worthless. The earth should be levelled into the trenches, exposing the crowns of the plants, and by introducing some rank manure there will be plenty of time for a crop of cauliflowers (in single line) before the increasing leaves of the sea-kale require their removal.

A caution should be given to avoid a mode of culture highly approved by many who grow or sell, but do not themselves eat sea-kale. Instead of protecting and blanching the shoots by a covering of sweet earth, they overwhelm their beds with barrowfuls of leaves collected in autumn (oak-leaves are most in vogue), and just shovel them on one side when the crop is fit for the knife. This plan has not a single advantage over the earthing system, except indulging the laziness of the cultivator, for any decrepit old woman could sprinkle a few apronfuls of leaves over her garden, but the other requires an able-bodied man to do it properly. The plants are not a day forwarder unless the leaves heat very much; and then the characteristic of the method is fully evidenced. If the oak-leaves were gathered perfectly dry, and remained so during the whole winter, if no grass or weeds were ever intermingled with them, all might be well. But the leaves are damp, there is some green rubbish among them, and consequently a slight fermentation takes place, slight putrefaction follows, and the produce grown beneath, which delights the eye like a beautiful branch carved in ivory, disgusts the taste by a flavour as nauseous as it is undoubtedly unwholesome. I have seen sea-kale of this kind produced at table that was quite uneatable. No wonder we now and then meet with people who have tried it only once, and do not like it.

This valuable esculent, so easy of cultivation, requiring no peculiar advantages of soil, climate, or situation, well deserves to be more extensively propagated. Those who form their judgment from the estimation in which it is held in and about London, are little aware how far it is from being general in the remoter districts of Great Britain. It is admirably adapted by its hardiness to such countries as Canada, Norway and Sweden, Northern Russia, etc., where if earthed up before the frost came, it would lie dormant under the thick snow, and be ready on the return of spring to put forth its delicious shoots. It is also fitted for those northern insular situations where the temperature never rises above a moderate degree, and where the rains of summer and the constant damps of winter would rot our more tender vegetables.

NEGLECTED BORDER FLOWERS.

DID the real merits of a plant depend entirely upon fashion, there would be good grounds for allowing some of our most ornamental garden subjects to remain in comparative solitude; but this is not really the case, and fashion does sometimes pass over really good things to fondle its own pets. *Cassia corymbosa* is not particularly popular just now, but it is an excellent bedder, valuable as a late flower, and calculated to enliven our beds and borders when the ordinary bedders are looking shabby. We have had it the past autumn looking exceedingly pretty, with its bright orange blossoms and handsome foliage, and I would recommend it to all who desire to maintain a freshness in their borders to the extreme limits of the season. Planted with *Veronica Andersonii*, *Salvia fulgens*, *chrysanthemums*, and such late bloomers, it is all that can be desired for autumn gaiety, and is well calculated to take the place of early annuals. It strikes readily from side-shoots in spring or summer, by the same method as is used for verbenas, etc. I would recommend keeping it in pots over the winter and spring till June, and bedding out in the usual manner. It grows freely in a soil composed of equal parts peat, loam, and leaf-mould, with a portion of sand.

Linaria peloria is a plant very little cultivated near London, and although not useful as a bedder, it is likely to prove useful in filling up some of the dry places

which abound in suburban gardens, where ordinary border plants do not thrive. It is a variety of *L. vulgaris*, remarkable for the singular formation of its flowers, which are of a bright yellow colour, a profusion of which it yields in July and August, but not being in great demand few nurserymen are likely to have it; and this, I believe, is the case with many of the curious old favourites, which of late years have been neglected for the sake of colour and effect. I well remember some gay beds of silenes, lychnis, pinks, double daisies, ranunculuses, including the old bachelor's buttons, campanulas, saxifragas, sedums, pinks, veronicas, and thrift edgings, fraxinellas and American cowslips, and others of the old border plants of the days of Abercrombie; and I believe it would be no retrogression to cultivate them more largely in gardens of modern type, since amongst them we find bloomers for almost every month of the year; and, indeed, some of the early spring and late autumn flowers are still valued for these qualities. The old Christmas rose is yet unrivalled in its property of flowering in the midst of frost and snow; the hepatica, the wood-anemone, and the primrose as the harbinger of spring; the starworts, the golden rods, and the *Rudbeckias*, and other old-fashioned garden inmates, are not, let us hope, likely to become extinct, but to flourish again, endeared by age or improved by breeding. F. C.

TROPICAL EFFECTS IN ENGLISH GARDENS.

IN reading some remarks relating to bedding out stove and other plants of distinct and marked foliage, for giving a tropical appearance to a border or clump, which appeared in the June number of the *FLORAL WORLD* for the present year, it struck me that the idea is susceptible of considerable extension; in fact, that the materials for giving a decidedly tropical appearance not only to a border, but to a whole garden, are both cheap and easily obtainable. Every gardener, amateur and professional, knows that a young healthy tree, with plenty of room, after it is well established, grows with great vigour; and that, if closely pruned or headed down, it makes surprisingly strong shoots and large leaves. I have seen a variety of sumach headed

down every winter and every summer, it makes three or four shoots two yards or more in length, and leaves eighteen inches, or two feet, or even more, in length. The common ash and cassia when served the same grow with surprising vigour; the latter being less littery than otherways. The sycamore, horse and Spanish chestnuts, plane, elder, walnut, the large-leaved kinds of oak, and others of the commonest trees, when headed down spread out their broad arms and gigantic leaves in tropical style. Let a good space of ground, or a wide border, be planted with two or three year old stumps of any of the vigorous-growing kinds of forest trees, planting them eight or ten feet apart; let them make in the first place a stout upright stem, to

the height of from three to nine or ten feet, according to fancy, with an eye to future effect, then prune them in to that every winter. Amongst or around these may be planted such hardy foliage plants as would be in keeping, and in the summer time *Palmia Christis*, *Cannas*, and all large ornamental leaved plants, may go between, not excluding *Heracleum giganteum* and other large umbellifera. These all combined would give a decidedly tropical effect, and would add to the many diversities of which gardening is susceptible. I have seen large plants of *Fuchsia spectabilis*, *Eriobotrya Japonica*, *Acacia Lopontha*, *magnolias*, and such like plants, plunged in a broad clump, and they presented a noble appearance and I believe a few common trees, planted and treated as above, would not only be in perfect harmony, but add considerably to the effect; and there are plants innumerable, both dwarf and tall, of graceful or symmetrical habit, remarkable for beauty or singularity of foliage, having the same effect as flowers as regards variation of colour, without the litter of shed petals, and dead flowers, and unsightly seed-pods. The suggestions above offered may be ob-

jected to on the score that when denuded of leaves the trees will present the appearance of so many bare stakes; but what are all deciduous trees and shrubs but bare sticks during the winter months—in fact, what are thousands of old lilacs, syringas, and elderberries, so dearly cherished in nearly all suburban gardens, but huge faggots that while away the winter in affording shelter to dust, dead leaves, litter, and stray pieces of paper. For my part I cannot understand how those who love their garden can devote so much room to subjects that are nothing but bare masses of brushwood one half the year, and filled with dusty leaves the other half, with an interval of a fortnight in the flowering season, and an annual crop of dead wood into the bargain. Such ground planted with dwarf young evergreens, which are cheap enough, would present a verdurous appearance the whole year; or ground left bare in the winter, if frequently stirred, is by no means unsightly, and if rightly planted the following year will be amply remunerative to the lover of real effect.—*Garden Oracle*, 1862.

GARDEN AND GREENHOUSE WORK FOR DECEMBER.

AZALEAS and **CAMELLIAS** claim attention, now that we have little else to depend upon to keep the conservatory gay. A little pains now bestowed in training and disbudding will repay, and camellias are so heavily set with buds, that generally speaking it would be most unwise to allow all to remain. We have seen lately bushels of buds removed in some places where a moderate show of fine flowers is preferred to a mass of indifferent ones, the profusion of which will weaken the plants.

BULBS not yet planted must be got in, and as they are unusually fine this season, purchases may yet be made. We always advise early purchasing and early planting; but if we would ever excuse delay, it is now, the stock being in such prime condition that the bloom is sure to be satisfactory, though the after growth may be weak through their remaining out of the ground too long.

BUSH FRUITS should be planted, pruned, and manured. Burn the prunings, and if the ashes are not wanted for any particular purpose, throw them round the roots of the trees; they are powerfully fertilizing. Gooseberries and currants may be lightly forked between to mix the manure with the soil, but raspberries should have three or four inches of dung, not very rotten, laid

on the border or piece, and not be dug or disturbed at all.

CARNATIONS and **PICOTEEs**.—The young stocks look amazingly well this season. They require plenty of air and very moderate watering, and be kept clean.

CINERARIAS and **CALCEOLARIAS** for specimens may now want a shift; they must on no account get pot-bound, or they will bloom prematurely. Water on fine mornings, and beware of green-fly and mildew.

CLIMBERS in greenhouses may now have special attention to reduce their dimensions, lay in wood for next summer's bloom, and clear the walls and trellises.

EVERGREEN SHRUBS planted now must be heavily mulched with dung to keep frost from their roots.

PERALONIUMs to be cautiously watered and allowed to rest. Specimens may be tied out and stock struck late may be shifted and kept growing.

ROSES may be planted now during dry weather; the ground to be in good heart, deep y trenched and well manured. On loamy land broken up from grass, roses do better than in ordinary garden soil, and those who grow for show should either use turf liberally or break up meadow ground for their best plants. Get in briars quickly before the best are gone. *Manettis*

layered during summer may now be divided and planted out in rows for budding next summer.

RHUBARB and **SEA-KALE** put into force. We object to the usual plan of blanching rhubarb as spoiling it; unless it is acid, it is worthless, and the blanching system as followed for the markets, only produces a mass of vegetable pulp, without beauty or flavour.

TOM THUMB is the best of all peas for forcing; sown now and grown in pots with French beans it will give a good return. Those who force for Covent Garden sow in October and November. This pea is of dwarf branching habit, and of very little use for out-door work being tender in constitution.

VERMIN.—Now that gardeners have a little breathing-time is a good opportunity for cleaning frames, lights, and the under sides of stages, and other places where vermin harbour. In the stove there is often great need of such work when there is no time to do it.

Vines in growth may have a temperature of from 50° to 60°, and during sunshine 10° higher. If 55° is taken as the average, it will be safer than a higher temperature, now that we have so little daylight. A too rapid growth is often the precursor of mildew and shanking, and after the turn of the year heat may be used more liberally, and the vines being then well leaved, will enjoy the full advantages of it.

TO CORRESPONDENTS.

PROPAGATING CASE.—Observing in the **FLORAL WORLD** for November, the inquiries addressed to "K. Z.," for a further explanation of the lamp referred to in his communication in the **FLORAL WORLD** for October, allow me to say, that I think an undue importance is attached to it. My experience, and that of many friends, goes to prove that the lamp must be adapted to the circumstances of each particular case, and that one description of lamp which would be suitable in one case, would be the reverse in another. In respect to the lamp, I think the first desideratum is simplicity of construction. Thus, in some instances, a common tumbler filled with oil, in which one or two floating wicks are placed, has been found to answer admirably. One great point in its favour is, that as the oil is consumed, the floats necessarily sink gradually lower, and consequently the heat is kept up at a more equable temperature than when the flame is always at one point. The greatest difficulty I found was in procuring good colza oil. Complaining one day to a friend on this subject, and also on what I considered the expense of the article, he gave me information upon which I acted, and as I have by so doing saved much trouble and expense, I wish to let the readers of the **FLORAL WORLD** have the benefit of my experience. And now let me digress to observe that although we are always so ready to complain of the adulterations and dishonesty of tradesmen, I do not think we are equally ready to speak well of those in whom we may place confidence. To resume then, the next time I drove into town I called at the establishment spoken of by my friend, and requested to have my empty can refilled. As I was anxious to observe the appearance of the oil, I stood by while this was being done, and what was my astonishment to find that before the gallon measure was emptied my can was actually overflowing. This led to the following explanation by the tradesman in whose shop this occurred. It appears that it is too often the case, that cans which should hold eight pints (or one gallon), are constructed to hold only seven pints. Consequently, as in my case, the can appears to contain the proper measure, when the purchaser is being defrauded of one pint of oil. Remarking upon the difficulty of discovering this kind of fraud, I was told that on the contrary it could be most easily and

simply detected as follows: It appears that one gallon of colza oil weighs just nine pounds, and sperm oil eight and three-quarter pounds, consequently, all that is necessary to be done is to weigh the empty can when sending it to be refilled, and again weighing it on its return. Thus, if a one gallon can when empty weighed one and a-half pound, it ought, if it contains one gallon of colza oil, to weigh ten and a-half pounds when full. Very few people keep measures, but almost all have weights. As the quality of the oil was far superior to any I ever had before, and as I obtained full measure, I found the expense nearly one-third of what it was before. The name and address of the tradesman referred to is, Mr. Samuel Bonsor, 433, Oxford Street.—K. Z.

MAKING UP A FIRE.—Last winter I found my furnace fire (saddle) would not last all night. I sought advice but did not learn much, now I have found out the secret of my own at any rate. Supposing I have a nice little fire half an hour before my last visit, I push with a bent poker, made on purpose, all the *live fuel to the back*, and let it alone for five minutes. I next charge it up to the door with cinders and small coal, and leave the ash-pit door open; in about twenty minutes I close it and leave only the door-ventilator open, closing the damper all but one and a-half inch. Of course the amount of air left must be regulated by the damper in the chimney. I use one of the house chimneys, and that used to smoke a room till I had a loose board fixed, which at once cleared all difficulties.

DOUBLE GLAZING AND KEEPING FROST OUT.—I know there is nothing new in what I have to propose, but many amateurs may not think of doing what I have done and found very useful. The roof of my fernery is of sheets twenty inches by fourteen, and I had the rabbets cut deeper than usual (although this is not absolutely necessary), so that on dropping a *loose sheet of glass* of the same size, it is held by the hard putty about a quarter of an inch away, and thus great loss of heat prevented. This makes a useful and not objectionable great coat to the roof. Over one of my ventilating flaps I have strained a piece of fine tiffany, so that if the sun comes out while the water is hot, I can ventilate while the air is frosty without much fear

As I am ignorant of fern peculiarities, I want to know if some old varieties collected years ago will thrive with the exotics I am now attempting, or if the atmosphere will be too forcing for them. My principal doubt is about the amount of moisture required in winter. Any additional hints on fern culture will be acceptable; is there any manual on it? I have digested "Rustic Adornments" thereon.—Yours obliged, H. [Ferns group together better than most other orders of plants. Common British species will do in greenhouse or stove admirably, if well ventilated. In fact, any fern will do in an atmosphere warmer than is natural to it, but not in one colder.—Ed.]

FERN GROWING.—H.—Do not be deterred by anything the gardeners say. Ferns are "dreadful things for scale," when kept without air and water coddled with excessive heat; but when grown in a rational manner are as easily kept clean as any class of plants known. Ferns under glass should be occasionally watered in winter though at rest. Your tank being shaded is all the better for fish. Perhaps a few fancy varieties of catex would do best to grow in it; try *Arundo donax variegata* in a pot plunged all summer. We cannot call to mind any good rhododendrons with bad foliage, so you can choose from former lists and descriptions. Why not see the plants and select according to your own judgment of what you want. The most compact rhododendron we know is Cunninghami. Procure and pot them at once. The *Spergula* continues to improve; it is now greener and neater than the grass adjoining it. Mr. H. has no "recent experience" of London-grown conifers to relate.

ALTERATIONS OF GREENHOUSE.—H. S.—Combine plans 1 and 2, which will be most effective for utility and beauty. Then by widening the back four or five feet, as in plan 1, and setting out the gable ends six feet instead of ten feet, as in plan 2, a widely proportioned structure will be produced, with this advantage, that by the introduction of a glass partition, the two ends and the centre may be used for different classes of plants; all to be heated with one boiler, and regulated by stop-cocks. Another advantage attending this will be that the rafters and lights (if sound) taken away could be used for setting out the gables. The addition of glass at the back will be of great advantage to the plants there. Do not combine any furnace with your hot-water pipes. Procure a Stephenson's boiler, which requires no setting; make the stove-hole roomy and dry; if it has to be placed below the drains, let in a slate tank to receive it.

FLUKE POTATO. USE OF NETTING.—T. Jones, gardener at Winsley Hall, Shropshire, writes to say that he finds the Fluke the best of all potatoes in that climate and soil. They crop heavily, are free from disease, and keep any reasonable length of time. On our own heavy wet land at Stoke Newington we found this season the best potatoes to be Cockney, Fluke, Fifty-Fold, and Regents. The last we shall give up on account of the complaints from the kitchen that it melts in cooking. The Fluke is certainly the best of all the varieties introduced during the last ten years for general usefulness and keeping, and we incline to the opinion that Fifty-Fold is a better early kidney than Ash-leaf, though the last is good still, and not easy to obtain true. Our Shropshire friend complains that insects harbour in the thread netting used for covering wall-trees, but that surely must be owing to the exposure of the netting in summer-time. During the time of peach-bloom there are very few butterflies and moths about to deposit eggs in the meshes. Our friend proposes to use Gishurst, but we should be rather disposed to

soak the netting twelve hours in a solution of blue vitriol, one pound of the material to twenty quarts of water. This will probably kill the vermin, and will certainly make the netting last twice as long as otherwise. We don't often hear from Shropshire! What is going on there?

ORANGES UNDER GLASS.—R. W. P.—Your trees are starving. Nine-tenths of the complaints that reach us about oranges are owing to the same bad practice as you have followed of keeping them in the same old soil for years, and giving them insufficient water. You will see in the recent paper by Mr. F. Clitty how to recover your trees, which are worth an effort. We have an admirable paper on the subject by Mr. Howlett, which arrived too late to appear in this number. It will be published next month. Mr. Howlett has treated the subject so that all classes will be interested, and old hands will learn from his paper something new.

ZAUSCHNERIA CALIFORNICA.—H. P. T.—We quite understand your case: the position is admirable. We had seed so labelled, and grew about three hundred plants, and they all turned out to be a common weedy epilobium. One of our correspondents made complaint a year ago, and we said the seed must have died, and the weed took its place. Now we know that this was one of the tricks of the trade, and if we felt we could fix responsibility, we would sue for compensation. But we know that the fraud was of continental origin, and that the house from which the seed was obtained was as much duped as we were.

VARIOUS.—J. Howlett, *Abbey Gardens, Ramsey.*—The photographs and paper both to hand; delayed only for convenience. We should like a list of the principal species of ferns planted.

—M. M., *Thorpe Abbey.*—Your plant is *Sagina procumbens*, about which you will find the fullest information in former numbers of the *FLORAL WORLD.*—C. R. Gordon.—We long ago made an end to the difficulty in regard to the Waltonian lamp, and got only abuse for our trouble, and our private letters were borrowed or purloined, in the hope of doing us a damage. So you cannot have read your *FLORAL WORLD* with care not to know that Palmer's No. 6 Single Wick Night Lights exactly suit the lamp, if Sherwood's are not obtainable. You will have to raise the case to make room for the lamp in which these candles burn. If you have any difficulty in procuring these candles, write to Mr. Colsell, oilman, Bishopsgate Street Within, London, E.C., and ask him to supply Palmer's lamp and night lights, as used by Mr. Hbberd. When you begin again, take care to fill the case first with boiling-water. Do not allow the flame of the candle to touch the bottom of the boiler. Perhaps by using boiling-water you may yet succeed in getting the lamp to work, many fail through placing the flame in the midst of a mass of cold conducting material, the proximity of which freezes the flame out.

NAMES OF PLANTS.—*Brentley.*—We cannot name plants from seeds, and you will understand why, if you place side by side seed of cabbage and cauliflower. The seed you send is probably *Atriplex hortensis rubra*, the ornamental foliated plant on which remarks have been several times made in *FLORAL WORLD.* Celery seed will grow when ten years old, as we know by experience. The Tritomas are slow Cape bulbs, nearly hardy, which bloom superbly if planted out in a rich sandy soil.—*Subscriber.*—Refuse lime from gas-works is powerfully fertilizing, and may be used to any kitchen-garden crops. To go into the merits of the question is more than we have room for now.



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